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Politics this week

Dec 6th 2007
From The Economist print edition

A report by America's National Intelligence Council concluded that **Iran** did have a nuclear-weapons programme up until 2003, but that it had since been halted. Democrats pounced on the document to attack George Bush's claim that Iran poses a substantial threat (with some calling for a “surge in diplomacy” with Tehran). Condoleezza Rice, America's secretary of state, said the findings proved that international pressure on Iran worked. Mr Bush called on Iran to “come clean” about its nuclear programme or face more isolation. Iran's president, Mahmoud Ahmadinejad, claimed “a great victory”. See article

Mr Bush was set to unveil a relief plan for **home-owners** struggling with mortgage payments, the centrepiece of which is a freeze on interest rates on certain subprime loans. See article

Mitt Romney prepared to make a big speech on religion and politics intended to counter objections to his **Mormon** faith from many on the religious right. The lecture is being compared to a similar address made by John Kennedy in 1960 that tackled gripes about his Catholicism.

A 19-year-old man who lost his job shot dead eight **shoppers** at a mall in Omaha, Nebraska, before killing himself.

Victory for Vladimir

AFP

Vladimir Putin's **United Russia** party won two-thirds of the vote in a parliamentary election. The Russian president said the result showed the electorate supported policies that had brought stability to Russia. Poll monitors and some Western governments criticised the conduct of the election. Opponents of the Kremlin, including Garry Kasparov, a former chess champion, said it was a “farce”. See article

The EU initialled a pre-membership agreement with **Bosnia** at a ceremony in Sarajevo. A full agreement on starting the process by which Bosnia could eventually become a member of the EU depends on the country's merging its ethnically separate police forces. See article

At least one person was killed and several others injured when a booby-trapped package exploded in a building in central **Paris** housing the former law firm of Nicolas Sarkozy, the French president.

Thousands of people marched in Madrid to protest against ETA, the **Basque** terrorist group, after two Spanish police officers were killed in a surveillance operation of suspected members in France. José Luis Rodríguez Zapatero, Spain's prime minister, who is accused by some of appeasing ETA, was booed by a handful of mourners at the funeral of one of the policemen.

No place like home

The Iraqi Red Crescent, a sister organisation to the International Red Cross, said that around 25,000 **Iraqi** refugees have returned to Iraq since mid-September. Although that is still a small fraction of the 4m who have been displaced since the American invasion of Iraq, it is a reflection of improving security there. Some 110,000 internally displaced people have now returned to their homes as well. See article

Meanwhile, a car bomb in central **Baghdad** killed at least 15 people. The American defence secretary, Robert Gates, was visiting the city at the time to declare that “a secure, stable Iraq is in reach”.

Gillian Gibbons, a British teacher, was released from prison in **Sudan**. She had been jailed for allowing a

class of seven-year-olds to name a teddy-bear Muhammad. President Omar al-Bashir ordered the release after protests against her incarceration from (some) Muslims in Sudan and more around the world. See article

European and African leaders were due to gather for a **summit in Lisbon** on December 8th, the first such meeting for seven years. The British prime minister, Gordon Brown, refused to go because of the presence of Zimbabwe's president, Robert Mugabe. See article

Hurricane Hugo weakens

AP

Hugo Chávez's plan to change the constitution to make **Venezuela** a socialist republic and to allow him to run for re-election indefinitely was narrowly defeated in a referendum. It was the first time Mr Chávez had lost a popular vote since he came to power in 1999, and was widely viewed as a big political reverse for him. See article

After facing months of corruption allegations, Renan Calheiros resigned as president of **Brazil's** Senate. Mr Calheiros is an ally of President Luiz Inácio Lula da Silva; by resigning, he keeps his seat. See article

The United States Senate approved by 77 votes to 18 a free-trade agreement with **Peru**, which had already cleared the House of Representatives.

A change in the environment

Immediately after being sworn in as **Australia's** prime minister, Kevin Rudd signed documents ratifying the Kyoto protocol on climate change. Mr Rudd is due to attend the United Nations' climate-change conference in Bali.

The government in **Kazakhstan** celebrated the decision by the Organisation for Security and Co-operation in Europe (OSCE) to award the country the group's rotating chairmanship in 2010. Human-rights groups condemned the decision. See article

A parcel-bombing in a shopping mall in Colombo, **Sri Lanka's** capital, that killed 20 people and an assassination attempt on a government minister were blamed on the Liberation Tigers of Tamil Eelam. In response, the government detained more than 2,500 Tamils in the Colombo area. Most were freed within days. See article

China complained about the entry of an American aircraft- carrier, *USS Kitty Hawk*, into the Taiwan Strait last month. China had unexpectedly stopped the vessel and others from making a Thanksgiving port-call in Hong Kong. See article

A hotly contested by-election in **Hong Kong** was won by Anson Chan, a former senior civil servant who campaigned on a platform of introducing full democracy at the earliest opportunity.

In **Pakistan**, two former prime ministers, Benazir Bhutto and Nawaz Sharif, agreed to discuss a list of joint demands that must be met if their two parties are to contest the elections on January 8th. President Pervez Musharraf said the elections would be held “come hell or high water”.

AFP

Thousands of people crowded the streets around the Grand Palace in Bangkok to mark the 80th birthday of **Thailand's** King Bhumibol. After 61 years on the throne, the king has been in poor health recently.

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Business this week

Dec 6th 2007
From The Economist print edition

Vivendi, a French telecoms and media group, announced a merger of its video-game business with **Activision**, a gaming company based in southern California, which it will control with a stake of up to 68%. The $18.9 billion deal brings together under one roof Activision's bestselling video-console titles, such as “Guitar Hero” and “Call of Duty”, with Vivendi's wildly popular interactive online game “World of Warcraft”. See article

Motorola's chief executive, Ed Zander, said he would step down in January. Mr Zander has been Motorola's boss for nearly four years, during most of which time the company thrived on the success of its RAZR ultra-slim mobile phone. Sales have slowed, however, and Mr Zander has come under mounting pressure; last May he fought a proxy challenge for control of the company from Carl Icahn, an investor who holds 3% of Motorola's shares and wants it to be split into several parts. See article

AT&T said it would sell its **pay-phone** operations next year, leaving Verizon as the only large telecoms company with pay phones in America. Coin-operated phones were introduced in 1889 and soon flourished, even amid the proliferation of residential lines in the 1950s. Their number has since declined, however, from around 2.6m in 1998 to 1m today, most of which are owned by smaller operators.

Murdoch gets religion

Fox Entertainment, part of the **News Corp** conglomerate, bought **Beliefnet**, a rapidly expanding website that hosts content on an assortment of faiths and spirituality. There was no revelation about the terms of the deal.

Randstad and **Vedior**, two employment-services companies based in the Netherlands, agreed to merge. The deal, worth around *euro*3.3 billion ($4.9 billion), creates the world's second-largest provider of temporary workers, behind Adecco and ahead of Manpower.

Air France-KLM confirmed that it was interested in making a non-binding offer for **Alitalia**, kicking off another effort by the Italian government to sell its struggling national carrier.

Raiding the Lada

General Motors said it was hoping to take a “significant stake” in **Avtovaz**, Russia's biggest carmaker. Western carmakers have been expanding in emerging markets, such as Russia, to help offset slowing domestic sales. Avtovaz is close to making a decision on selling a minority stake in its business; bids have also been tabled by Fiat and Renault.

Borse Dubai and **NASDAQ** seemed to have secured their joint effort to take over **OMX**, which operates stock exchanges in the Nordic region, after **Qatar's** state-backed investment authority withdrew its request for regulators to approve its rival bid. Speculation was rife that the Qataris were manoeuvring themselves into a position to become the biggest shareholder in the London Stock Exchange.

The **Bank of England** cut its main interest rate by one-quarter of a percentage point, to 5.5%, amid signs of an economic slowdown in Britain. A closely watched index compiled by HBOS, a bank, reported that house prices in Britain fell by 1.1% in November, compared with October, the first run of three consecutive monthly falls since 1995. See article

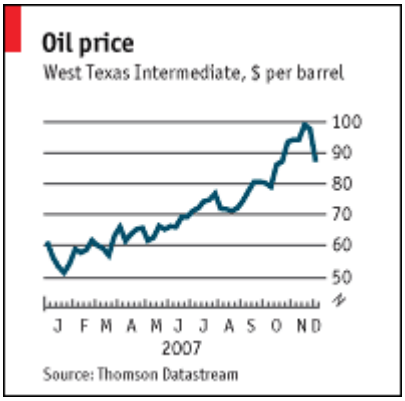
Royal Bank of Scotland announced write-downs of £950m ($1.9 billion) related to subprime-mortgage loans and £250m on leveraged loans capping a dismal few weeks for big banks worldwide, which revealed the initial extent of their losses from the meltdown in credit markets.

The share price of **MBIA** slid by 16% after Moody's, a rating agency, changed its assessment of the bond insurer, saying it was “somewhat likely” to find itself short of capital. Were big bond insurers to lose their top-notch ratings, as looks increasingly likely, a wide range of assets, from mortgage-backed securities to municipal bonds, would face more mark-downs.

Eni, Italy's biggest oil and gas company, made another expansive move by agreeing to buy **Burren Energy** for £1.74 billion ($3.53 billion). If successful (South Korea's state-owned oil company is also interested in Burren), Eni will gain assets in Congo and Turkmenistan. Meanwhile, a deadline was extended to December 20th for talks to end between Eni and Kazakhstan over the ballooning development-costs of the Kashagan field in the Caspian Sea.

High and mighty

OPEC decided not to increase its production of oil for the time being, despite calls from some quarters for it to do so in order to dampen **oil prices** (which fell back this week). The cartel said it was pumping enough to supply the demand for winter heating-fuel and that it would review its decision in February.



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KAL's cartoon

Dec 6th 2007
From The Economist print edition

Illustration by Kevin Kallaugher

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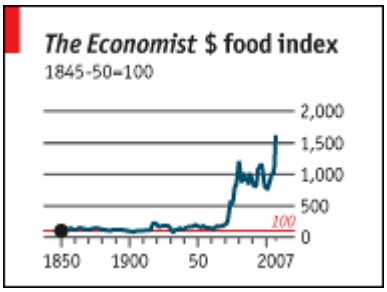
Food prices

The end of cheap food

Dec 6th 2007
From The Economist print edition

Rising food prices are a threat to many; they also present the world with an enormous opportunity



FOR as long as most people can remember, food has been getting cheaper and farming has been in decline. In 1974-2005 food prices on world markets fell by three-quarters in real terms. Food today is so cheap that the West is battling gluttony even as it scrapes piles of half-eaten leftovers into the bin.

That is why this year's price rise has been so extraordinary. Since the spring, wheat prices have doubled and almost every crop under the sun—maize, milk, oilseeds, you name it—is at or near a peak in nominal terms. *The Economist*'s food-price index is higher today than at any time since it was created in 1845 (see chart). Even in real terms, prices have jumped by 75% since 2005. No doubt farmers will meet higher prices with investment and more production, but dearer food is likely to persist for years (see article). That is because "agflation" is underpinned by long-running changes in diet that accompany the growing wealth of emerging economies—the Chinese consumer who ate 20kg (44lb) of meat in 1985 will scoff over 50kg of the stuff this year. That in turn pushes up demand for grain: it takes 8kg of grain to produce one of beef.

But the rise in prices is also the self-inflicted result of America's reckless ethanol subsidies. This year biofuels will take a third of America's (record) maize harvest. That affects food markets directly: fill up an SUV's fuel tank with ethanol and you have used enough maize to feed a person for a year. And it affects them indirectly, as farmers switch to maize from other crops. The 30m tonnes of extra maize going to ethanol this year amounts to half the fall in the world's overall grain stocks.

Dearer food has the capacity to do enormous good and enormous harm. It will hurt urban consumers, especially in poor countries, by increasing the price of what is already the most expensive item in their household budgets. It will benefit farmers and agricultural communities by increasing the rewards of their labour; in many poor rural places it will boost the most important source of jobs and economic growth.

Although the cost of food is determined by fundamental patterns of demand and supply, the balance between good and ill also depends in part on governments. If politicians do nothing, or the wrong things, the world faces more misery, especially among the urban poor. If they get policy right, they can help increase the wealth of the poorest nations, aid the rural poor, rescue farming from subsidies and neglect—and minimise the harm to the slum-dwellers and landless labourers. So far, the auguries look gloomy.

In the trough

That, at least, is the lesson of half a century of food policy. Whatever the supposed threat—the lack of food security, rural poverty, environmental stewardship—the world seems to have only one solution: government intervention. Most of the subsidies and trade barriers have come at a huge cost. The trillions of dollars spent supporting farmers in rich countries have led to higher taxes, worse food, intensively farmed monocultures, overproduction and world prices that wreck the lives of poor farmers in the emerging markets. And for what? Despite the help, plenty of Western farmers have been beset by poverty. Increasing productivity means you need fewer farmers, which steadily drives the least efficient off the land. Even a vast subsidy cannot reverse that.

With agflation, policy has reached a new level of self-parody. Take America's supposedly verdant ethanol subsidies. It is not just that they are supporting a relatively dirty version of ethanol (far better to import

Brazil's sugar-based liquor); they are also offsetting older grain subsidies that lowered prices by encouraging overproduction. Intervention multiplies like lies. Now countries such as Russia and Venezuela have imposed price controls—an aid to consumers—to offset America's aid to ethanol producers. Meanwhile, high grain prices are persuading people to clear forests to plant more maize.

Dearer food is a chance to break this dizzying cycle. Higher market prices make it possible to reduce subsidies without hurting incomes. A farm bill is now going through America's Congress. The European Union has promised a root-and-branch review (not yet reform) of its farm-support scheme. The reforms of the past few decades have, in fact, grappled with the rich world's farm programmes—but only timidly. Now comes the chance for politicians to show that they are serious when they say they want to put agriculture right.

Cutting rich-world subsidies and trade barriers would help taxpayers; it could revive the stalled Doha round of world trade talks, boosting the world economy; and, most important, it would directly help many of the world's poor. In terms of economic policy, it is hard to think of a greater good.

Where government help is really needed

Three-quarters of the world's poor live in rural areas. The depressed world prices created by farm policies over the past few decades have had a devastating effect. There has been a long-term fall in investment in farming and the things that sustain it, such as irrigation. The share of public spending going to agriculture in developing countries has fallen by half since 1980. Poor countries that used to export food now import it.

Reducing subsidies in the West would help reverse this. The World Bank reckons that if you free up agricultural trade, the prices of things poor countries specialise in (like cotton) would rise and developing countries would capture the gains by increasing exports. And because farming accounts for two-thirds of jobs in the poorest countries, it is the most important contributor to the early stages of economic growth. According to the World Bank, the really poor get three times as much extra income from an increase in farm productivity as from the same gain in industry or services. In the long term, thriving farms and open markets provide a secure food supply.

However, there is an obvious catch—and one that justifies government help. High prices have a mixed impact on poverty: they hurt anyone who loses more from dear food than he gains from a higher income. And that means over a billion urban consumers (and some landless labourers), many of whom are politically influential in poor countries. Given the speed of this year's food-price rises, governments in emerging markets have no alternative but to try to soften the blow.

Where they can, these governments should subsidise the incomes of the poor, rather than food itself, because that minimises price distortions. Where food subsidies are unavoidable, they should be temporary and targeted on the poor. So far, most government interventions in the poor world have failed these tests: politicians who seem to think cheap food part of the natural order of things have slapped on price controls and export restraints, which hurt farmers and will almost certainly fail.

Over the past few years, a sense has grown that the rich are hogging the world's wealth. In poor countries, widening income inequality takes the form of a gap between city and country: incomes have been rising faster for urban dwellers than for rural ones. If handled properly, dearer food is a once-in-a-generation chance to narrow income disparities and to wean rich farmers from subsidies and help poor ones. The ultimate reward, though, is not merely theirs: it is to make the world richer and fairer.

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Venezuela

The beginning of the end for Hugo Chávez

Dec 6th 2007
From The Economist print edition

Apathy, splits and a revitalised opposition thwart "21st-century socialism"

Getty Images

Get article background

AT HIS final rally before a referendum on constitutional reform on December 2nd, President Hugo Chávez warned tens of thousands of his red-shirted supporters, many of them bused in from across the country to fill Caracas's Avenida Bolívar, that voting yes to the reform was a vote for him whereas a no vote would be "a vote for George W. Bush". So one reading of the referendum's result is that in nine years in power it has been Mr Chávez's signal achievement to turn Venezuela into the only place on the planet nowadays where the American president could win a popular vote.

But in this, as in so many other things, Mr Chávez was mistaken. The constitutional "reform" was not about Mr Bush at all. It was about whether oil-rich Venezuela would remain a democracy, or adopt what was in reality a substantially new constitution of quasi-totalitarian character that could have allowed Mr Chávez to remain president for life. His defeat was narrow (by just 1.4%), but profound in its import. It almost certainly heralds the beginning of the end of Mr Chávez's Bolivarian revolution and its influence in Latin America.

The revolution cannot end immediately. Only a year ago Mr Chávez was elected for another six-year term by a landslide. He remains popular, continues to command all the institutions of state and controls record oil revenues. In recognising defeat, he has burnished his democratic credentials. These were tarnished earlier this year when he began to implement "21st-century socialism"—which to many looks merely like a diluted version of the 20th-century Cuban or Soviet varieties.

In defeat, Mr Chávez said that he would try again for the constitutional reform. But if he does, he will probably lose again. For something fundamental has changed in Venezuela. Over the past nine years Mr Chávez has regularly been able to count on the support of some 60% of voters against an opposition discredited by the failures of past governments and its support for an abortive coup in 2002.

Three things have now altered that pattern, probably for good. First, the opposition has been revitalised by a new and vigorous student movement, untainted by the past. The second is growing apathy and disillusion among the *chavista* faithful. Behind that lies the sheer incompetence of the Bolivarian revolution and its recklessly expansionary economic policies (see article). Ordinary Venezuelans note that they cannot buy milk even when oil is close to $90 a barrel. Third, the constitutional reform opened up a fissure between authoritarians and democrats in the *chavista* camp.

Mr Chávez faces a choice: move quickly to a command economy, or to more sustainable policies. His referendum defeat makes the first course hard: it would risk a split in the armed forces and serious

violence. The better option would be for him to draw back, make his peace with his own moderates and cool the economy. That would require humility he has yet to show, and might undermine his popularity.

The best news is that powerful figures in the armed forces and the *chavista* movement are committed to democracy. This third force, between Mr Chávez and the opposition, holds out hope that Venezuela can navigate a peaceful course towards the alternation of power. It helps, too, that the conservative opposition has at last embraced the 1999 constitution.

The defeat of a bankrupt philosophy

The ramifications of Mr Chávez's defeat go far wider than Venezuela. He has always proclaimed the Bolivarian revolution to be continent-wide. Because it is such a personal project, its life is now finite: absent constitutional change, Mr Chávez must leave office by 2013. Economic pressures at home mean that his bounteous foreign aid—including cheap oil for Cuba—may be trimmed before then. That gives extra urgency to the efforts of Cuba's acting president, Raúl Castro, to launch economic reforms against the apparent opposition of his elder brother, Fidel. In Bolivia, Evo Morales, a socialist of Andean-Indian descent who is Mr Chávez's closest disciple, faces mounting opposition to his efforts to impose a new constitution that would cement his power. In Ecuador another self-proclaimed 21st-century socialist, Rafael Correa, is rapidly putting some distance between his ideas and Mr Chávez's.

Although in some ways they threaten democracy, the likes of Mr Chávez and Mr Morales may well have ended up broadening it, since they represent groups who have previously felt excluded. Their mistake lies in clinging to an old-fashioned socialism, involving the centralisation of political power and state control of the economy. Most Venezuelans—and most Latin Americans—clearly have no enthusiasm for this. It was not so much Mr Chávez who was defeated in the referendum, as his bankrupt philosophy. That is good news for Latin America, and especially for its poor.

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The Euro-African summit

Please come, but don't bring your monsters

Dec 6th 2007
From The Economist print edition

The dictators of Sudan and Zimbabwe should not have been welcome in Lisbon

Reuters

IN LISBON at the end of this week, the leaders of the European Union will sit down with the leaders of the African Union. It will be a grand jamboree, the first of its kind since a summit in Cairo seven years ago. But one prime minister from the European side will not be showing up. This is not because Gordon Brown has been having such a torrid time filling Tony Blair's boots in Britain, though he has. He is staying away because he refuses to attend a meeting that is also being attended by Zimbabwe's Robert Mugabe.

Behind the scenes, Britain's allies complain that this is mere grandstanding—and Mr Brown is capable of that. But on this occasion it is he who is right and they who are wrong.

Since Europe and Africa are connected not only by an unfortunate past but also by a complex present of trade, aid and migration, there is naturally plenty for the two groups of leaders to discuss. But the truth is that this meeting is taking place for two less noble reasons. One has to do with the rotating six-month presidency of the EU, and the deeply felt need of every incumbent to have some big project to show for it. In this case it is Portugal that sits as president, and the Lisbon jamboree was its big idea (see article). When Mr Brown said he would stay away if Mr Mugabe showed up, and the Africans threw their weight behind Mr Mugabe, the Portuguese chose to go ahead without Mr Brown rather than spoil the party.

The second big impulse behind the meeting is a feeling on Europe's part that it is missing out. Africa may be Europe's neighbour and Europe its biggest trading partner, but China has lately been muscling in on the action. Over the past five years trade between Africa and China has increased fivefold. A year ago China organised a great get-together of African leaders in Beijing. Worse, the Chinese are generally held in Europe to be wooing the Africans with a horribly seductive new approach: no carping about human rights and bad government, just straight commercial dealings without paternalism, lectures and strings attached. America too is showing growing interest in Africa as a new front in its “war on terror”. So on top of the Portuguese desire for a big project has come a more general European feeling that it is in danger of being left out.

Both of these might seem good reasons for holding a summit. But look closer. In Lisbon, the Europeans will be sitting down politely with not one but two leaders who are treating their respective peoples with extraordinary brutality. Mr Mugabe has pauperised a formerly prosperous country and used thuggery to remain perpetually in power. Also present at the great summit will be Sudan's president, Omar al-Bashir, whose government has presided in recent years in Darfur over the killing of some 300,000 people and the displacement of several million—and who continues to obstruct the deployment of an effective international peacekeeping force.

Selling out

We know all this, insist the hosts, but the best answer in such cases is “constructive engagement”. That is nonsense. After Lisbon, Europe will continue to conduct its complex affairs in Africa in the usual way, through a network of bilateral relations. When the EU wants to make a powerful collective point—about the depredations of a Mugabe or a Bashir—it should certainly speak with one voice. But inviting such men to a party is hardly the way to do it. Just ask (though no one will) the fearful, hungry people of Zimbabwe and Darfur.

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Iran's bomb programme

Pressure works (“high confidence”)

Dec 6th 2007
From The Economist print edition

America's spies have changed their minds. But a nuclear Iran remains a danger

AP

IF THE consequences were not so serious, it would be tempting to mock the fiascos and flip-flops of America's intelligence services. Before 2003 they said that Iraq had chemical and biological weapons and was seeking nuclear ones. They were wrong. In 2005 they said that Iran had a secret nuclear programme and was determined to get a bomb. Now they say they were wrong about that too (see article).

This week's national intelligence assessment says with “high confidence” that although Iran was indeed working on a bomb until the autumn of 2003 it then stopped. By the middle of this year it had probably (“moderate confidence”) not started again. And unless it got fuel for a bomb from abroad it would take at least until late 2009 (“moderate confidence”) but more likely between 2010 and 2015 to make it at home.

What is the baffled layman to make of this? First that intelligence is neither art nor science but a system of best guesses based on incomplete evidence. If new evidence suggests that the previous guesses were wrong, it is a good thing that spies are willing to say so. Some of the outraged hawks who want America to bomb Iran's nuclear facilities accuse the spies of sexing down their latest Iran dossier in order to make amends for having sexed up the one that led America into a war in Iraq. But that would imply a truly impressive conspiracy between the 16 agencies that signed the report. Of course, the spies' new assessment may be wrong, as their previous ones proved to be. But it is most unlikely to be a tissue of lies.

For that very reason, however, relieved doves who think the spectre of a nuclear Iran or of an American attack has now disappeared had better read the report again. Its final sentence says (“high confidence”) that Iran has the scientific, technical and industrial capacity eventually to produce nuclear weapons if it chooses. As to what “eventually” means, the assessment has not changed: it was always late 2009 at the earliest but more probably the middle of the next decade. As to whether Iran will do so, the spies say (“moderate-to-high confidence”) that “at a minimum” it is keeping the option open.

That is troubling, because Iran can continue to work towards a bomb without resuming the secret programme America now thinks it stopped in 2003. That programme was about “weaponisation”: the fiddly business of making a device that can set off a chain reaction in nuclear fuel. But creating such a warhead is the easier part of building a bomb. Harder by far is making the fuel. And, as the report notes, making the fuel is precisely what Iran continues to do in defiance of UN Security Council resolutions at its uranium-enrichment plant at Natanz. For now, it is true, Iran is enriching the uranium at below weapons grade. It says it is doing so only in order to power reactors to produce electricity. But it has no such

reactors. And to get the uranium to weapons grade it has only to run the stuff often enough through Natanz's centrifuges.

In short, nothing in the new assessment makes the story Iran tells about Natanz any less fishy or the dangers posed by its dash to enrich uranium any less troubling. But it has utterly changed the politics of the issue. The case for American pre-emption now becomes almost impossible to sell either at home or abroad. That is probably a good thing, given that a military attack was always likelier to restore Iran's determination to build a bomb than destroy its ability to get one. Unfortunately, the report may also make it harder for America and Europe to maintain, let alone sharpen, the sanctions the world has imposed in order to make Iran stop work at Natanz.

Talk if necessary, but keep up the sanctions

Since the spies say Iran stopped its bomb-making in 2003 because of world pressure, relaxing it now would be perverse. But to keep the world on side, America may have to show new flexibility. For example, while tightening sanctions, it could offer to talk to Iran about all aspects of their troubled relations, even before work at Natanz stopped. Iran might refuse. But that would at least make it clear which side was the spoiler.

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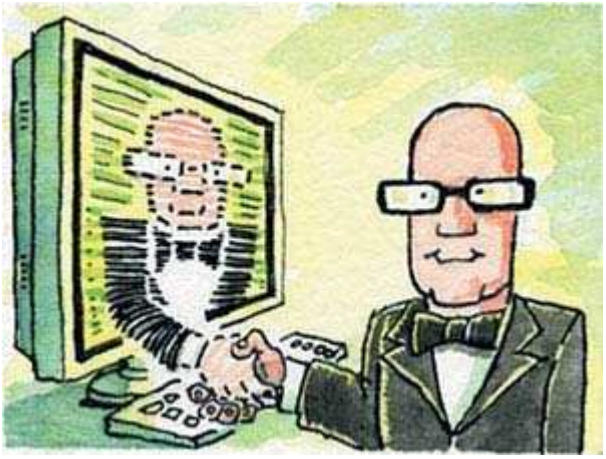
Real and virtual worlds

Better together

Dec 6th 2007
From The Economist print edition

The internet, supposedly a new realm, is most useful when coupled to the real world

Illustration by David Simonds



IN THE early days of the internet, the idea that it represented an entirely new and separate realm, distinct from the real world, was seized upon by both advocates and critics of the new technology. Advocates liked the idea that the virtual world was a placeless datasphere, liberated from constraints and restrictions of the real world, and an opportunity for a fresh start. This view was expressed most clearly in the "Declaration of the Independence of Cyberspace" issued by John Perry Barlow, an internet activist, in February 1996. "Governments of the industrial world, you weary giants of flesh and steel, I come from cyberspace, the new home of mind," he thundered. "Cyberspace does not lie within your borders. Our world is different. We are creating a world that all may enter without privilege or prejudice accorded by race, economic power, military force, or station of birth."

Where Mr Barlow and other cyber-Utopians found the separation between the real and virtual worlds exciting, however, critics regarded it as a cause for concern. They worried that people were spending too much time online, communing with people they had never even met in person in chat rooms, virtual game worlds and, more recently, on social-networking sites such as MySpace and Facebook. A study carried out by the Stanford Institute for the Quantitative Study of Society in 2000, for example, found that heavy internet users spent less time talking to friends and family, and warned that the internet could be "the ultimate isolating technology".

Both groups were wrong, of course. The internet has not turned out to be a thing apart. Unpleasant aspects of the real world, such as taxes, censorship, crime and fraud are now features of the virtual world, too (see *Technology Quarterly*, in this issue). Gamers who make real money selling swords, gold and other items in virtual game worlds may now find that the tax man wants to know about it. Designers of virtual objects in Second Life, an online virtual world, are resorting to real-world lawsuits in order to protect their intellectual property. And several countries have managed to impose physical borders on the internet to enforce local laws, from censorship in China to France's ban on the sale of Nazi memorabilia.

Mind meld

At the same time, however, some of the most exciting uses of the internet rely on coupling it with the real world. Social networking allows people to stay in touch with their friends online, and plan social activities in the real world. The distinction between online and offline chatter ceases to matter. Or consider Google Earth, which puts satellite images of the whole world on your desktop and allows users to link online data with specific physical locations. The next step is to call up information about your

surroundings using mobile devices—something that is starting to become possible. Beyond that, “augmented reality” technology blends virtual objects seamlessly into views of the real world, making it possible to compare real buildings with their virtual blueprints, or tag real-world locations with virtual messages.

All these approaches treat the internet as an overlay or an adjunct to the physical world, not a separate space. Rather than seeing the real and virtual realms as distinct and conflicting, in short, it makes sense to see them as complementary and connected. The resulting fusion is not what the Utopians or the critics foresaw, but it suits the rest of us just fine.

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On Italy, race and wealth, nationalism, badgers, Ian Smith, children's dummies, Romania

Dec 6th 2007
From The Economist print edition

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Immigration law

SIR–You depicted the Italian decree for the removal of certain European Union citizens from Italy as an emotional overreaction to the killing of an Italian woman ("Disharmony and tension", November 10th). You also maintained that the measure was unsuccessful as the expulsions numbered hundreds, not thousands. Both propositions are not true.

The decree is a legislative tool that gives immediate effect to a previous bill that merely implements a 2004 EU directive, nothing more, nothing less. It does not contain extraordinary measures. Furthermore, its aim is not to carry out mass deportations, which is the desire of only a small racist minority in Italy, but to adopt provisions that put a check on those people who are truly dangerous. This reflects something *The Economist* often calls for, namely good governance in countries that receive immigrants and co-operation with the countries from which they mostly originate.

Giuliano Amato
Italian minister of the interior
Rome

Generations and wealth

SIR – Lexington wondered how much is racism to blame for downward mobility among middle-class blacks and reached the conclusion: "Probably not much" (November 24th). But the alternative factors he offered to explain this downward trend actually have a lot to do with racism and discrimination. It is true that the median black household is much less wealthy than that of the median white household. However, a large proportion of whites in America can trace their wealth back to homesteading programmes that blacks were not allowed to participate in. More recently, the GI bill and other New Deal legislation helped many whites accumulate their present wealth, but blacks did not often engage in these programmes because of discrimination in the armed forces, housing and education.

Lexington also pointed to the black-white earnings gap for full-time workers, but ignored the impact of current discrimination in the labour market and education that in turn is often linked to segregated housing. There may be some reasons not directly attributable to racism that explain the downward mobility of blacks, the decline in union jobs for example, but they are not the reasons proffered by Lexington.

Nandinee Kutty
Arlington, Virginia

The meaning of nationalism

SIR – Your leader on Mikheil Saakashvili's crackdown in Georgia defined "sovereign democracy" as "crony capitalism laced with nationalism" ("Misha's mess", November 17th). The use of "nationalism" in this context casts aspersions on a much-maligned and perfectly laudable term. In the post-Soviet era former captive nations would do well to purge themselves of the propaganda indoctrinated by the Bolshevik Communists against bourgeois nationalism and cultivate a healthy patriotism that is the backbone of every viable nation-state. I suggest that "chauvinism" or "xenophobia" would have more properly conveyed your intended meaning.

Ksenia Maryniak
Edmonton, Canada

A pest to farmers

SIR – What was in every other respect an accurate and concise summary of the latest animal diseases to befall British farming was marred by the statement that “badgers are routinely culled in the hope of protecting cattle from TB” (“Stalking the land”, November 17th). It is true that whereas badger culling is routine elsewhere, in Britain no such culling has taken place since October 2005 when government-sponsored trials ended. Since then, the incidence of TB in cattle has increased by around 20%.

There is an intense debate raging at present about whether or not badger culling should be reintroduced in order to stem the flow of infection from wildlife to cattle. A solution must be found. If it is not, bovine TB, which is already costing farmers and taxpayers over £100m ($206m) a year, has the potential to become a greater menace than foot-and-mouth, bluetongue and avian flu combined.

Anthony Gibson
Director of communications
National Farmers' Union
Stoneleigh, Warwickshire

Memories of times past

SIR – Your obituary of Ian Smith was in most respects a fair one (November 24th). However, to compare the regime of Mr Smith's Rhodesia to President Robert Mugabe's Zimbabwe by describing both as a “tyranny” is unfair. The living standards of Africans in Mr Smith's Rhodesia—including in health and education—were vastly higher than they are in Zimbabwe now, or were in other African countries at the time. Moreover, Mr Smith lived on in Zimbabwe for many years, without any state protection, and was regarded with tolerance or even (whisper it not) affection by the African population. He was hardly a tyrant.

Rob Lee
Morpeth, Northumberland

The dummies guide

SIR – Your briefing on nanotechnology translated the British “children's dummies” as “comforters” for Americans, which provided no help whatsoever (“A little risky business”, November 24th). A “dummy” is the British term for what we would call a pacifier or soother. In all my 66 years of living in various parts of North America I've never encountered the word “comforter” in any other contexts than those of religion, personal relationships and bed coverings (it's a down- or feather-filled relative of the quilt). When I looked the word “dummy” up in a dictionary one definition was “pacifier”, with the label showing its regional usage as “Brit.”

Alan Arthur
Mount Pleasant, South Carolina

Romania's record

SIR – In my dual capacity as faithful reader of your publication and economic counsellor to the prime minister of Romania, I am appalled by the carnivalesque depiction of my country in recent articles. It seems to me that you like to focus on subjects such as the slaughter of pigs (Charlemagne, November 17th), begging (“Disharmony and tension”, November 10th) and sausages and plum brandy (“Justice for some”, November 3rd), none of which is a particularly strong area of expertise for you. But while you concentrate on imaginary battles between spooks, crooks and idiots, genuinely important economic changes in Romania go unreported.

If you did more research you would know that Romania has a vibrant economy, an excellent record on economic reform (according to the World Bank), attracts private-equity firms interested in property, and counts Ford, Renault and Vodafone among recent investors.

I hope you mend your ways. In the meantime, I take heart from one of James Joyce's timeless quotes:

“a man's errors are his portals of discovery”.

Razvan Orasanu
Counsellor on economic affairs to the prime minister of Romania
Bucharest

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Defeat for Hugo Chávez

The wind goes out of the revolution

Dec 6th 2007 | CARACAS
From The Economist print edition

Getty Images

Venezuelans have seen the future—and many of them realise that it doesn't work

Get article background

ON REFERENDUM night, December 2nd, a giant, inflatable Chávez doll lay face-down and semi-deflated on a Caracas street. Nothing better summed up the moment. As workers dismantled the stage that was to serve as the scene of his triumph, letting the air out of the doll, Hugo Chávez was grappling with how to respond to his first-ever defeat at the polls.

Were Venezuela the dictatorship that some of his more radical opponents claim, its people might have spent the night toppling bronze statues of the Leader as he fled the country. Were it a parliamentary democracy, the government would surely have resigned. As it is, Mr Chávez still has the chance to pump some air back into his project and serve out the remainder of his presidency—which now must end in early 2013. But there is no doubt that his plan to install what he calls “21st century socialism” in what was once, in the 1970s, the richest country in Latin America has been badly punctured. And that setback may also take much of the momentum out of his industrious efforts to form a regional block of allies and client states.

Voters had been asked for a yes or no on changes to 69 of the 350 articles in the 1999 constitution. Their effect would have been to concentrate almost all power in an already top-heavy executive. The pluralism enshrined in the current constitution would have been replaced with obligatory “socialism”. And two decades of decentralisation would have been reversed: elected state governors and mayors would have been eclipsed by an unelected “popular power” dependent on the presidency.

On any reasonable interpretation of the 1999 constitution (itself drafted and promoted by the *chavistas*), such fundamental changes should have been submitted to a separately elected assembly. Instead, Mr Chávez had them drafted in secret and rubber-stamped by a parliament which, thanks to the opposition's boycott of the election in 2005, is overwhelmingly composed of his unconditional supporters.

But by a tiny majority, of around 1.4% according to the official figures, Venezuelans said no. Many supporters of the president stayed at home. Only a year ago he had won a new six-year term with 7.3m votes or 63% of the total; by contrast, only 4.4m voted yes in the referendum.

It is a result that redraws Venezuela's political map. Hitherto, the president has been blessed with an

incompetent opposition, tainted by the failures of the 1980s and 1990s, when low oil prices pushed many Venezuelans into poverty. Having sought to overthrow Mr Chávez, first in an abortive coup and then through a general strike-cum-lock-out, many of the opposition's leaders were too easily dismissed as spoiled “oligarchs”.

But since his re-election last year, Mr Chávez has overreached himself and provoked some more dangerous opponents. His first mistake came last January, when he summoned the four parties in his coalition and ordered them to merge into a single Venezuelan United Socialist Party (PSUV), loosely modelled on Cuba's Communist Party. Podemos, a social-democratic party, and two other smaller groups refused. Then, in May, Mr Chávez decided not to renew the broadcasting licence of the main opposition television channel, ostensibly because it had supported the 2002 coup attempt. This was unpopular with ordinary Venezuelans and was opposed by a new and energetic student movement, which went on to take the lead in the No campaign.

The president's drive to turn the armed forces into a tool of his socialist project aroused the weighty opposition of General Raúl Isaías Baduel, who stepped down as defence minister in July and who is a hero to the *chavista* grassroots for his role in restoring Mr Chávez after the 2002 coup. Installed in a sleek glass office block in Caracas, General Baduel, a man as serene as the president is intemperate, has spent the past few weeks telling Venezuelans that the proposed reform amounted to another coup.

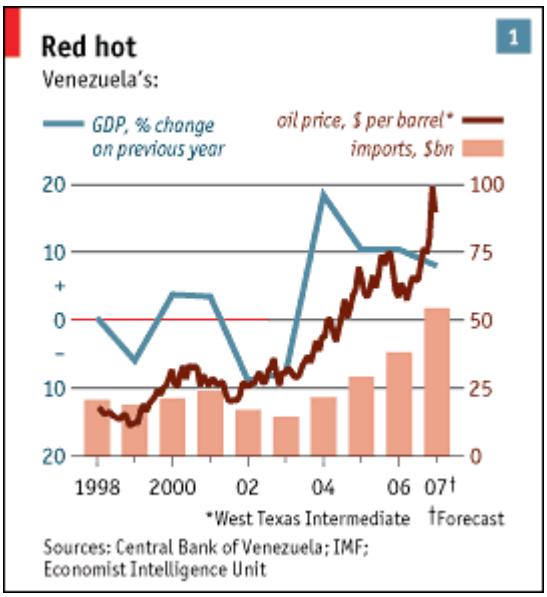
On top of that, many *chavista* politicians were unenthusiastic, since the reform would have let Mr Chávez run indefinitely for president but banned re-election for other posts. The *chavista* movement suffered “a top-to-bottom split, from state governors down to the grassroots”, said Ismael García, the leader of Podemos.

The emergence of what Mr García calls a “third pole” between the government and the traditional opposition allowed many of the president's supporters to vote no, or at least to abstain, without feeling that they were betraying their leader. The students did much of the hard work of bringing out voters and watching over ballot boxes. And when it seemed that Mr Chávez might be tempted to claim victory, General Baduel played a key role, with an—at least implicit—threat to reject such a result and split the armed forces.

The economy boils over

It is not hard to see what lies behind the decision of many *chavistas* not to vote. Their continuing loyalty to their *comandante* is being eroded by mounting economic distortions and the corruption and incompetence of his government.

It was Mr Chávez's good fortune to preside over a massive increase in the oil price (to which he made a modest contribution by cancelling plans under which private investment would have doubled Venezuela's oil output). The result has been a wild economic boom (see chart 1). This has prompted a sharp drop in the number of Venezuelans living in poverty, from 43% in 1999 to 27.5% earlier this year, according to government figures. Hundreds of thousands of new cars have turned Caracas into an all-day traffic jam.



The boom has been fuelled mainly by public spending, which has risen from around 20% of GDP in the late 1990s to some 38% last year (including several off-budget funds controlled by the president). It has been amplified by expansionary fiscal and monetary policies. To check inflation, the official exchange rate has been pegged at 2,150 bolívares to the dollar. That has been possible hitherto because revenues from oil exports have risen dramatically, from $17 billion in 1999 to $58 billion last year.

The result is known to economists as Dutch disease: an overvalued exchange rate favours imports but makes life hard for manufacturers and farmers. In Venezuela's case this has been exacerbated by Mr Chávez's ideological hostility to the private sector, which has involved selective nationalisation and intermittent threats to private property. While many private companies (and banks) have done well out of the boom, they have been loth to make long-term

investments. Imports have risen fourfold over the past four years, while GDP has expanded by only half over the same period.

José Manuel Puente, an economist at IESA, a business school in Caracas, sees four warning lights for the economy: oil output, inflation, fiscal problems and a growing shortage of dollars. Since Mr Chávez took direct control of PDVSA, the state oil company, after the crippling strike of 2002-03, production of crude has declined. That is partly because PDVSA has slashed investment in order to pay for social programmes, and partly because its payroll has doubled to 90,000 in the past four years. The government's policy of maximising its share of oil revenues by obliging foreign companies to become minority partners in joint ventures appears to have intensified the trend. Oil output has fallen for six consecutive quarters, according to the Central Bank. Although officials still insist that oil production is 3.3m barrels per day (b/d), even OPEC, of which Venezuela is a founder member, does not believe this: in October it slashed Venezuela's production quota to 2.5m b/d.

The second warning light is inflation (see chart 2). In November prices rose by 4.4%, the highest monthly figure for four years, taking the annual rate to 21%, the highest in Latin America. Food prices have risen even faster, by 29%—despite price controls. Because of those controls, staples such as milk, eggs, black beans and cooking oil are in such short supply that shoppers sometimes fight for them.

To try to slow inflation the government slashed VAT earlier this year, from 14% to 9%. To plug the resulting fiscal gap, in November it imposed a tax on financial transactions—one reason for that month's spike in inflation. Another clear sign of strain is a surge in the parallel-market price of the dollar. Even if oil prices remain at current levels, many economists believe the government will have to devalue and start to cool the economy early next year.

The frustrations of collectivism

That will strain political loyalty further. After nine years of the Bolivarian revolution (named after Símon Bolívar, the South American independence hero) Venezuelans are becoming increasingly disillusioned with its corrupt inefficiency. Look behind the ubiquitous billboards proclaiming the government's social projects, and everywhere the failures and frustrations are palpable.

Take, for example, a model collective farm near the village of Buenos Aires in the coastal plain of Barlovento, an area with a large black population east of Caracas. Set up in 2002, it looks like a neat suburban estate, its one-storey houses for 144 families grouped in 12 circular cul-de-sacs. Three tractors, from China and Iran, are parked nearby. But farming the project's 108 hectares (267 acres) “did not go as we wanted”, says Jacobo Pacheco, one of the community's leaders, with quiet understatement.

Mr Pacheco, who is 62 and whose red beret has an image of Che Guevara, says he continues to support Mr Chávez. But he paints a devastating picture of government mismanagement. Agronomists from the National Lands Institute (INTI), which is responsible for the project, advised the collective's farmers to plant half a dozen different fruits; all but the lemons failed, either because the land was unsuitable or because of defects in the irrigation system. The water supply to the houses has been cut off because a pump doesn't work. None of six promised workshops, providing training and employment in carpentry, metalworking and the like, has been built. The local branch of Mercal, the government's subsidised supermarket chain, has been closed for the past year.

The farm's members have to take outside work to make ends meet. Mr Pacheco says that collective farming doesn't suit Venezuelans. He wants INTI to divide the land into individual plots. He has other grievances, too. When invited to an exhibition about the project at the presidential palace he saw pictures and plans of the houses, showing that they should have been equipped to a higher standard. He has seen receipts for the household equipment and says that between them the officials and supplier involved pocketed 1 billion bolívares ($465,000).

This story rings true. Many government projects are either misconceived, or unfinished, or both—like the gleaming new fish-processing plant along the coast at Boca de Uchire that has stood empty for a year

because a planned wharf remains on the drawing board, while just three carpenters work on the beach building the fishing fleet designed to supply it. Two out of three of the Mercal branches in Caracas have closed, reckons Jésus Torrealba, a former opposition activist who now runs a radio programme on the problems of the poor *barrios*.

Officials point with pride to the Cuban-designed social programmes known as *misiones* implemented by Mr Chávez when oil revenues picked up in 2003. Certainly, a primary-health programme called Barrio Adentro, which is mainly staffed by Cuban doctors and dentists, seems to work well, and is valued by residents in poorer neighbourhoods. Yet such evaluations as exist of these programmes suggest they have had little overall impact.

AP

Oil at record prices, but food in short supply

Mr Chávez declared in 2005 that thanks to Misión Robinson, a scheme to teach adults to read and write, Venezuela had eradicated illiteracy, a boast quickly parroted by UNESCO officials. But the government was later forced to withdraw the claim after its own surveys suggested that over 1m adults are still illiterate. Perhaps the most successful educational policy has been one to extend the school day and provide meals. This was devised by a previous government, though to his credit Mr Chávez implemented it.

Despite the apparent success of Barrio Adentro, a recent decline in infant mortality merely mimics the historical trend in Venezuela, according to a study by Francisco Rodríguez, chief economist at the National Assembly from 2000-04 and now at Wesleyan University in Connecticut. The incidence of stunting and malnutrition in children has even slightly increased, from 8.4 per thousand in 1999 to 9.1 in 2006 according to government data. That points to the deterioration of public hospitals under Mr Chávez.

Strip away the propaganda, and the government's socio-economic policies do not particularly favour the poor. Much of the extra public spending has gone on arms purchases, bureaucracy (public employment has doubled) and infrastructure (some of it useful, to be sure).

The government also spends money on indiscriminate subsidies. These mean, for example, that a tank of petrol costs less than $2, and that all credit-card holders get a quota of cheap dollars. Such policies favour the better off—including the new *chavista* elite of military officers, political leaders and favoured businessmen. According to the Central Bank, the distribution of income has become less equal under Mr Chávez. The Gini coefficient, a standard measure of inequality, has risen from 44.1 in 2000 to 48 in 2005. Over the same period, income distribution has become more equal in Brazil, Mexico and Chile.

A different landscape

Margarita López Maya, a social scientist at the Central University of Venezuela, points to the Bolivarian revolution's success in bringing the poor into politics and giving them a sense of citizenship, partly through a network of neighbourhood councils. Had the constitutional reform been approved, this would have been jeopardised, she says, since the councils would have depended directly on the president and his largesse.

That sense of inclusion remains Mr Chávez's prime political asset. He still controls almost all the country's institutions, has billions of dollars to spend at will, and for the next nine months—thanks to an enabling law—can rule by decree over wide swathes of national life. He is a man whose political skills have frequently been underestimated, and who could yet bounce back from defeat.

After his reverse, Mr Chávez insisted that his project had not been derailed, merely shunted into a siding “for now”. That was a deliberate echo of the phrase he used after leading a failed military coup in 1992; seven years later, he was president. Maybe the country was not yet “ripe” for socialism, but “there will be no step back”, he said. “You should know that I am not withdrawing a single comma of this proposal.” He promised to reintroduce some bits of the reform by other means.

Nevertheless, the referendum marks a watershed. Mr Chávez “has been winged—he's passed his peak,” says Teodoro Petkoff, a centrist opposition leader and newspaper editor. For the first time in nearly a decade it is possible for Venezuelans to envisage life after Mr Chávez.

The opposition victory, and the admission of defeat by the president, ought to convince radicals on both sides that the only solution to the country's bitter political polarisation is peaceful and electoral. The emergence of the “third pole”, composed of Podemos, General Baduel and the student movement, should in itself herald a less polarised politics. Some talk of calling a constituent assembly to claw power back from the president. Others are looking ahead to elections for mayors and governors next year.

The referendum defeat means Mr Chávez cannot legally run again for the presidency. His aura of invincibility has gone, and the battle for the succession seems bound to begin soon. In the ruling party, political survival no longer demands unquestioning loyalty to the *comandante*. Fractures have already begun to appear in the supreme court and the parliament.

“This is not a 100-metre sprint, it's a marathon,” cautions Mr Petkoff. But its direction is clear. “Venezuelans have woken up” is a phrase often used by supporters of Mr Chávez to describe the political mobilisation of the poor. The referendum suggests that many of them are waking up to the shortcomings of his revolution.

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Health care and the presidential race

Arguing over the cure

Dec 6th 2007 | WASHINGTON, DC
From The Economist print edition

Illustration by Peter Schrank

Reforming America's health-care system is a thorny election issue

IT IS obvious to anyone that the patient is ill. But the physicians agree on little else: not the underlying cause, certainly not the appropriate course of treatment and least of all which among them is best qualified to administer it. As they argue, the patient just gets sicker.

Health care, along with the economy in general, immigration and the whole alarming nexus of war, terror and security is, according to pretty much every poll, one of the issues that American voters consider most important. And next year, in both the primaries and the general election, it will have particular resonance. Iraq may even fade as an election subject, if the number of Americans killed in action continues to decline as a result of the “surge” of troops into the area around Baghdad. Meanwhile, uncertainties about the economy tend to feed through into a preoccupation with health care. A majority of Americans (around 54% last year, according to the Kaiser Family Foundation, a Washington, DC, think-tank) get their tax-exempt health insurance through their employers, so losing a job often means losing cover. Even for those who remain in work, tightening market conditions are forcing employers to downgrade the insurance they offer.

But when it comes to health care—as opposed to the economy, or security—voters are at least being offered clear choices. All the Democratic candidates, for instance, and none of the Republicans, are proposing some version of universal health coverage in an attempt to end the anomaly whereby some 47m people, a sixth of the population of the world's most powerful nation, have no health insurance. A YouGov/Polimetrix poll for *The Economist* this week shows that half of all voters would like to see everyone get coverage, even if that means a tax increase, with only 36% opposed (see chart). On the campaign trail in New Hampshire recently John Edwards, a Democrat, won waves of applause every time he threatened to take away the health insurance of members of Congress if they did not provide something similar for all Americans.

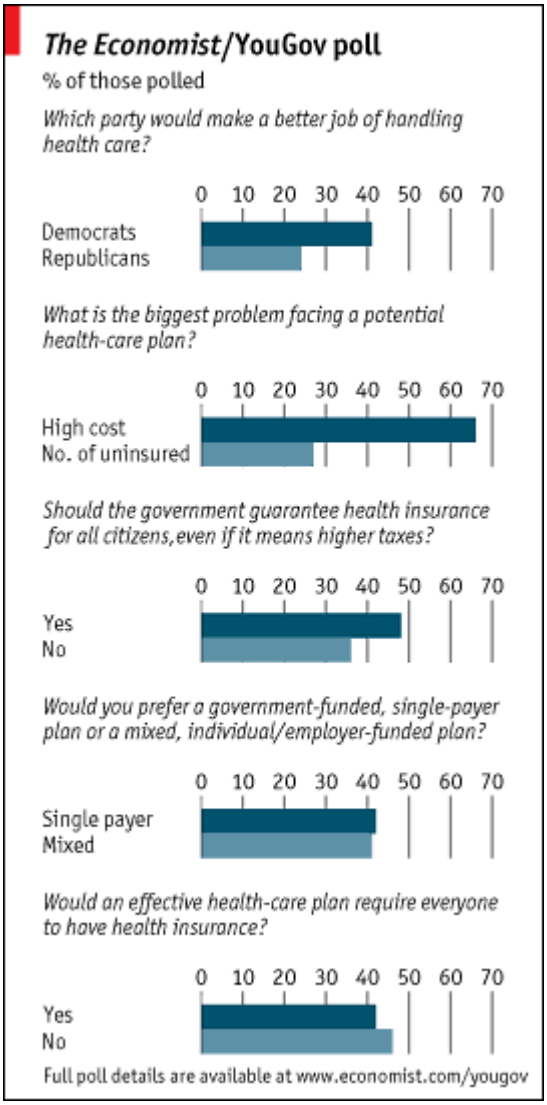
There is, however, no consensus among Democrats on how to achieve universal cover. In fact, health has become a lively battleground in the increasingly edgy war between Hillary Clinton and Barack Obama—so much so that Robert Reich, who was labour secretary in Bill Clinton's administration, publicly rebuked her this week, adding that he thinks Mr Obama's model for reform is better than hers. Mrs Clinton (along with Mr Edwards, the third-ranked Democrat, but unlike Mr Obama) has

proposed a detailed plan that relies on a “mandate”—a legal requirement that everyone have an approved form of insurance, just as they are required to have if they drive a car.

The idea is to make sure that younger people, who may feel they are unlikely to get ill and can do without cover, are required to join the insurance pool, making it healthier and supposedly bringing down premiums. They will also be more likely to get preventive treatment at an early stage if they do get ill, rather than becoming expensive emergency cases later on.

Mr Obama's supporters contend that there are problems with this model. First, people often simply ignore the mandate—usually because they cannot afford health insurance. Subsidies are to be made available under the Clinton and Edwards plans: but they will not cover everyone. And independent voices like Robert Reischauer's at the Urban Institute, another Washington think-tank, complain that many of the complexities in both these plans have yet to be worked out. Who will resolve disputes, of which there are certain to be many, between patients and government-approved insurance providers? What if people default on their payments? And will costs really come down? The experience in the only state to run a universal mandate so far, Massachusetts, has not been wholly positive (see article).

And, of course, mandates are perceived as bossy, which is why Republicans, in particular, hate them. Mr Obama's refusal to prescribe one may serve him well with centrist voters with bad memories of Mrs Clinton's first attempt at health-care reform in 1993-94, a political disaster on an epic scale. Mr Obama's plan focuses on providing a larger pot of cash to help the uninsured take out insurance, rather than trying to force them to do it.



To Republicans, the Democrats' insistence on concentrating on universal care is perplexing. Of the 47m uninsured, perhaps 10m are illegal immigrants. Of the others, many will be younger people who simply choose not to have insurance. Others are only uninsured temporarily. Mitt Romney, the former governor of Massachusetts who set up its universal health scheme, does not want to extend it to the whole country now that he is running for the Republican presidential nomination rather than election in a liberal state. Arnold Schwarzenegger, California's Republican governor, favours mandates; but he is not running for the top job.

Republicans prefer to concentrate on the cost side of health insurance, which makes sense. Health-care costs have risen, on average, 2.5 percentage points faster than GDP annually for four decades. That means, among other things, that the costs of the government-funded medical programmes—Medicare for the elderly and Medicaid for the poor—will bust the budget unless they are radically reformed. The Republicans further charge that Democratic plans to stop insurers excluding people with pre-existing medical conditions will hugely increase the cost of premiums.

Republicans focus much more closely than the Democrats do on using market mechanisms to bring down costs. John McCain, for instance, suggests allowing more competition across state borders. Along with Rudy Giuliani and Mr Romney, he also favours a much wider use of tax deductions. This would allow more people than just those lucky enough to have jobs that offer health insurance to benefit from what is, in effect, a large government subsidy. Mr Giuliani, for instance, would allow those without employer-provided insurance a tax deduction of $15,000 to help buy it.

Voters think cost is a bigger problem than coverage. But none of the Republicans is stressing health to the same extent as the Democrats are. Maybe that is why our poll shows almost twice as many people prefer the Democrats on the issue.

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Massachusetts

A soaring price-tag

Dec 6th 2007 | NEW YORK
From The Economist print edition

How much will the Bay State's plan for universal health coverage cost?

WHEN Massachusetts forged ahead with a plan for universal health coverage for all its citizens, many were sceptical. It will soon be clear whether the doubters were right. The plan faces its first big test this month: uninsured residents must sign up for a health plan by the end of the year or be fined.

Early signs suggest the plan is going well. Some critics had argued that it would not achieve universal coverage because the penalties for non-compliance (about $220, though this figure will rise sharply next year) were too small, but this week state officials announced that some 300,000 had already signed up. That is roughly half of the state's uninsured population, reckoned to be between 500,000 and 700,000. However, many of those who have recently signed up are poorer people whose new insurance is being subsidised, so the real test is yet to come.

Another worry has been that the scheme will “crowd out” the private sector by encouraging employers to drop coverage. Here too the evidence is positive, though tentative. Several surveys of employers suggest that very few so far (only 3% according to one poll) have stopped covering their workers.

The news on cost is less encouraging. Over the long haul, universal coverage schemes are supposed to reduce costs (see article). Another reason to think cost rises would slow down under the Massachusetts scheme is the “Connector”, a government-created and partly-subsidised market-place for insurance products that aims to beg, bully and badger health-care providers and insurers into containing costs.

That is a fine theory, but in practice, concedes Jonathan Gruber, a professor at MIT and an architect of the state's reform plan, “We're struggling with this.” Next year's insurance premiums are likely to rise by 10-12%, confirms James Roosevelt, head of the organisation representing the state's health plans. Officials running the new health-reform effort this week declared grandly that costs must not increase by more than 5% next year—but, as Mr Roosevelt observes, that seems “more hopeful than likely”. Mr Gruber explains that the state can influence rates for those who get subsidies, but says that commercial insurers can do pretty much what they like about rates for the rest of the population.

If costs continue to soar, the state will not be able to afford this scheme for long, and it will become unpopular. Mindful of the brewing storm, the state's insurers are launching a charm offensive. Mr Roosevelt's group promises much greater transparency in insurance pricing and wants hospitals to do the same. Will that be enough? Sunlight is a powerful disinfectant—but it may meet its match in health-care inflation.

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Iran

Nuclear fallout

Dec 6th 2007 | WASHINGTON, DC
From The Economist print edition

The spooks change their tune, and the politicians recalibrate

TWO years ago, America's spies assessed with “high confidence” that Iran was hell-bent on developing nuclear weapons. This week they did a U-turn. With equally high confidence, a new National Intelligence Estimate (NIE) concludes that the Iranians halted their covert nuclear-weapons programme in 2003, the year America invaded Iraq. The good news sparked mayhem in Washington, DC.

The most hawkish Iran-watchers dismissed it. Given the Islamic Republic's history of nuclear cheating, its truckloads of petrodollars and the possibility of buying nuclear technology on the black market, how can the spooks possibly know that it has stopped trying to make a bomb? Norman Podhoretz, an arch-hawk who advises Rudy Giuliani, a Republican presidential candidate, speculated that the intelligence services were deliberately undermining George Bush to prevent him from bombing Iranian nuclear sites.

Mr Bush, however, welcomed the report as evidence that his spies are getting better at figuring out what is going on in one of the world's most opaque states. He noted the judgment that Iran stopped its weapons programme because of outside pressure, which he considers a vindication of his tough approach. And he gave warning that Iran, which is still enriching uranium, could restart its bomb-building.

Many Democrats seized on the report as further evidence that Mr Bush is an untrustworthy warmonger. Only weeks ago, noted John Edwards, a presidential candidate, Mr Bush was noisily rattling sabres at Iran, warning that “If you're interested in avoiding World War Three, it seems like you ought to be interested in preventing [Iran] from having the knowledge necessary to make a nuclear weapon.” Mr Edwards accused Mr Bush and his neocon chums of having been “on a march to possible war with Iran for a long time”. Senator Joe Biden, another would-be president, said that Iran “is not a nuclear threat to the United States” and vowed that if Mr Bush went to war with Iran without congressional approval, he would be impeached.

Other Democrats were more circumspect. Barack Obama stressed that Iran is still a threat to its neighbours. Both he and Hillary Clinton urged more direct and energetic diplomacy to make sure that Iran never acquires nuclear weapons, and to persuade it to stop destabilising its neighbours, such as Iraq.

It is not obvious whom the report will help at the 2008 election. Democrats will benefit from the revelation of another big intelligence snafu under Mr Bush. But Republicans may gain if voters feel relieved that it has been corrected. Democrats could do well if voters decide the world is a safer place than they thought. But Republicans could gain if Democrats begin to sound complacent. The NIE report is good news, says Al From of the Democratic Leadership Council, a centrist group, “but we Democrats have to be careful not to make it better news than it is. Iran will still be a threat for the next president.”

Although Mr Bush says the report does not require a change in American policy towards Iran, the situation has clearly altered. Hawks in the White House, such as the vice-president, are weaker. More cautious types, like Condoleezza Rice, the secretary of state, are stronger. It is inconceivable that Mr Bush could attack Iran's nuclear facilities after his own spies have said it is not making nuclear weapons, says Ray Takeyh of the Council on Foreign Relations, a think-tank. Then again, if Iran's leaders calculate that they will not be attacked, they may be emboldened to make more mischief. And so the arguments rage on.

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Iowa

Winter surprise

Dec 6th 2007
From The Economist print edition

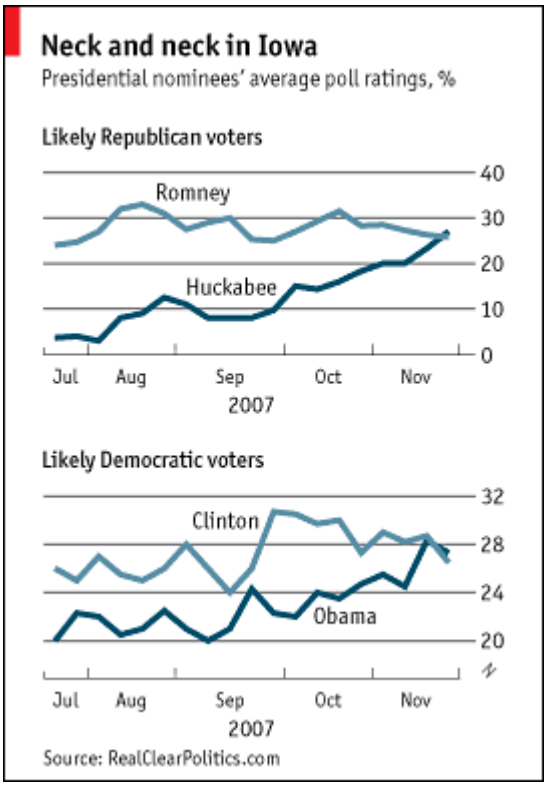
The front-runners fall back in the crucial first state to vote

IN OCTOBER a group of Iowa Democrats gathered for a Barack Obama "house party". People were polite in Iowa, one guest explained, and they expected the same good behaviour from presidential candidates. But now, less than a month before the parties hold their nominating caucuses there on January 3rd, a slew of new polls have bad news for the front-runners, and the candidates have moved into attack mode. How, though, to sling their mud without upsetting Iowans?

On the Republican side, Mike Huckabee, a former governor of Arkansas, has zoomed up to take a narrow lead over Mitt Romney, a former governor of Massachusetts, who had led in Iowa for months. Evangelicals, who will make up an estimated 40% of Republicans taking part in the caucuses, have rallied behind Mr Huckabee. He is resolutely conservative on social issues; he is not a Mormon like Mr Romney; and he is not lazy like Fred Thompson. But Mr Huckabee needs to build up his tiny Iowa organisation fast. If he goes in as the favourite and loses, he will have less chance of winning in other early-voting states, like New Hampshire, where his pitch is less attractive.

Mr Huckabee's rivals are doing their best to draw attention to the smiling Arkansan's weaknesses. They are attacking him for wanting to subsidise university fees for the children of illegal immigrants in Arkansas, as well as for raising certain taxes during his time as governor. Mr Romney, in particular, will have to offer a substantive critique of Mr Huckabee's economic populism and lack of foreign-policy expertise if he is to repulse the Huckabee wave. Both in his conservative credentials and in his personal chemistry, the robotic Mr Romney cannot compete with the affable former Baptist minister.

Meanwhile, the Democratic contest is now a tight three-way race between Hillary Clinton, John Edwards and Mr Obama. In some recent polls, Mr Obama has actually taken the lead. For the first time, the moving average compiled by Real Clear Politics, a website, now shows both Mr Romney and Mrs Clinton dislodged from the Iowa top spots (see chart).



In response, Mrs Clinton seems to be drifting to the left. In an interview with the *Financial Times* this week she turned more protectionist than ever, calling the Doha round of international trade talks into question. Her campaign has also begun questioning Mr Obama's integrity, using an essay he wrote in kindergarten entitled "I Want to be President" as evidence of overweening ambition.

Mrs Clinton, who is still miles ahead in all national polls of Democrats, seemed to trip up in Iowa on December 2nd when she said that making personal attacks on Mr Obama was going to be "fun". That is just the sort of fun those polite Iowans don't like very much.

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Low-cost housing

Beyond the picket fence

Dec 6th 2007 | LAKE FOREST
From The Economist print edition

The debate over affordable housing in America's suburbs

CHICAGO'S northern suburbs are among America's most idyllic. None is grander than Lake Forest, where the average home costs over $1m. But the suburb, by definition unaffordable, is building something unusual: affordable housing. A new development in Lake Forest will include a few cheaper homes, as required by a new town ordinance.

The debate over low-cost housing has moved well beyond the inner city. America's suburbs have changed. No longer the province of the affluent and the middle-class, they are home to an increasing share of new immigrants and poor (in 2005 the suburban poor outnumbered their urban counterparts). This new reality, combined with a growing distaste for ever-extending sprawl, long commutes, traffic jams and the pollution they bring, is driving efforts to build cheaper housing nearer to jobs in existing suburbs. The subprime mortgage mess has driven the trend, too.

However, regulatory barriers are getting in the way. Zoning policies in most of America tend to favour low-density districts with single-family houses. Developers face a host of further obstacles, from long approval periods to fees that raise money for parks, infrastructure and education. (Residents fear especially that dense projects overburden schools, though the Urban Land Institute, a think-tank based in Washington, DC, points to studies that dispute this.) Economists such as Harvard's Edward Glaeser argue that restrictive land regulations have helped drive up house prices. Of course, that is something that makes home-owners happy.

Rules that limit building are still most common in the north-east and Midwest, according to a study published last year by the Brookings Institution, another Washington think-tank, though efforts to promote affordable housing have increased. One of the oldest and most controversial policies is in Massachusetts, where developers can override local zoning in towns where less than 10% of housing qualifies as affordable.

In greater Chicago there is a push to ease old rules to accommodate new demand. The share of Hispanics, who have a lower median income than the general population, is projected to grow from 17% in 2000 to 33% in 2030, mainly in the suburbs, according to a report by the regional mayors' caucus and Chicago Metropolis 2020, a civic group. The share of elderly is also expected to rise, from 11% to 17%. Where they will live is unclear, but it is a fair bet that big new single-family homes will not suffice. Groups such as Metropolis 2020 and the Metropolitan Planning Council are driving a two-pronged effort. One goal is to prevent older houses from being torn down. The other is to allow a diverse stock of homes to be built near transport hubs and employment centres, such as the northern suburbs.

Highland Park, a suburb with an average home price of almost $800,000, has served as a model. Measures to boost cheaper housing include density bonuses for builders, an ordinance requiring more affordable housing to be built as part of any new development, a trust to assemble land for development and a state programme through which the town and employers help workers buy homes near their jobs. Some nearby suburbs have taken note. (In a region prone to snow, it is not good if teachers live an hour away.)

The state, meanwhile, is doing its bit. One Illinois law requires wealthy towns to create affordable housing plans; another measure proposes to reward school districts when dense, cheaper projects are built within their borders. A new agency is hard at work creating a regional plan for housing and transport in the Chicago area. Still, zoning is ultimately controlled by municipalities—and greater Chicago alone has 272 of them. Change will be easier in some than in others.

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The campaign trail

Primary colour

Dec 6th 2007
From The Economist print edition

Funny money
“This was really done to try to focus on my personal life.”

Rudy Giuliani on a claim that while mayor of New York his security expenses were reimbursed by various government agencies rather than the police department. ABCNews.com, November 29th

Fashion police
“Mitt Flops—sounds like something you'd wear to the beach, but they could cost you.”

Log Cabin Republicans, a gay group, are running anti-Mitt Romney radio ads. Associated Press, November 29th

Consolation prize
“Well, Bill, I think they also make good vice-presidents.”

Hillary Clinton responds to a question from Bill Richardson about whether governors, such as himself and Bill Clinton, make good presidents. CNN.com, December 2nd

Girl power
“Because I've gotta support the girls. And because I'm a big fan of the Clintons.”

Madonna backs Mrs Clinton. Women's Wear Daily*, December 4th*

Unsolicited advice
“Stop acting like a vitamin-deficient Adlai Stevenson. Striking a pose of being high-minded and too pure will not work. Americans want to see you scraping and fighting for the job, not in a mean or ugly way but in a forceful and straightforward way.”

Karl Rove offers his advice to Barack Obama. Financial Times*, December 3rd*

Know your audience
“I know this is the end of a long work day. Have a beer...sit down, relax, take a load off.”

Michelle Obama campaigns to a crowd of young professionals in Des Moines. Los Angeles Times*, December 3rd*

What would Jesus do?
“Jesus was too smart to ever run for public office.”

Mike Huckabee avoids discussing Jesus's view of the death penalty at a presidential debate, Florida, November 28th

Young and foolish
“I understand she is even quoting my kindergarten teacher in Indonesia.”

Mr Obama responds to attacks from Mrs Clinton. ABCNews.com, December 3rd

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Water in the West

Nor any drop to drink

Dec 6th 2007 | LAS VEGAS AND LOS ANGELES
From The Economist print edition

Gripped by drought, America's West is rethinking how it uses water

A FEW warning signs and a rickety pier are all that remain of Overton Beach's once-busy lakeside marina. The boats have been gone since February, towed more than 30 miles (50km) to where they are in less danger of running aground. Fish-cleaning stations are now hundreds of yards from the receding shoreline. At the local rangers' station, a placard describes the Lost City, an ancient Indian settlement drowned when the Hoover Dam was built in the 1930s. That city is no longer lost: so low has the surface of Lake Mead fallen that it is re-emerging from the water.

“This is not a normal drought,” says Pat Mulroy of the Southern Nevada Water Authority. Since 2001 the flow of water into Lake Mead has been below average for all but one year. The reservoir is now less than half full. If the drought does not break in the next few years, the Las Vegas metropolis will be the first to suffer. Its 1.8m inhabitants depend on the lake for nine-tenths of their water supply. Many more victims will follow: no fewer than seven states, as well as northern Mexico, rely on the Colorado River.

Fearing that the surface of Lake Mead will soon drop below the level of one of its two pumps, Las Vegas is quickly building another. It has bought ranchland in eastern Nevada and plans to build a pipeline to bring its water hundreds of miles south. Next year it will raise the sum it pays city residents to tear up their lawns and replace them with cacti and other abstemious flora. The price of water is likely to go up.

Conservation has already reduced water use in Las Vegas from a peak in 2002. Impressively, every drop of water that enters the city's sewers is cleaned and pumped back into Lake Mead. But Ms Mulroy says that conservation alone cannot stave off a crisis on the Colorado River. She believes global warming has permanently reduced its flow. Even if it hasn't, human settlement will create an unbearable strain. The population of the seven states that depend on the river grew by 10% between 2000 and 2006, compared with 5.6% in the rest of America. And much of the growth is in the driest parts of those states. Getting more water to them will be hard. Yet finding it is easy.

Water, water everywhere

In places, the beige American West gives way to fields of vivid green, which are often kept that colour by sprinklers running in the middle of the afternoon. Farmers use the great majority of the West's water, which they get at bargain rates. Even in California, by far the most populous state in the region, four times as much water is poured onto farmland as runs out of taps or is sprinkled over lawns. Farmers in the Imperial irrigation district, east of San Diego, pay $17 per acre-foot of water (that is, enough to flood an acre of land a foot deep, equivalent to 1.2m litres). In San Diego a household that used the same amount in a year would pay $1,311.

It makes sense to grow some crops in California. No place in America so closely resembles an open-air greenhouse as does the 400 mile-long Central Valley, which produces much of the nation's fruits and nuts. In 2005 California's almond crop had an export value of $1.8 billion. More ecologically dubious, however, are the state's vast cotton and alfalfa farms. This year more than half a million acres (200,000 hectares) of what would otherwise be desert were devoted to the cultivation of rice, much of which was exported to Japan.

Farmers have history to thank for their liquid bounty. In the West, water law is founded on the principle of “first in time is first in right”—in other words, he who first diverts water from a river has the strongest claim on it. This doctrine evolved in the 19th century, in response to the needs of miners. It turns out to suit modern farmers rather well. Better still, California's landowners are allowed to drill for groundwater. Each year, over a million acre-feet more of it is pumped out of the earth than returns to aquifers.

The cities would, of course, pay much more for the farmers' water than could possibly be made growing rice. But the water is not always the farmers' to sell. Many sources belong to water districts, which require the approval of all members before a transfer can take place. Rural politicians tend to oppose the idea of letting fields turn to dust in order to fill the swimming pools of Las Vegas and Beverly Hills. And, while California has an extensive infrastructure for moving water around between users (see map), many states, including Nevada, do not.

Yet the cities' desperation, and their consequent willingness to pay top dollar for water, is speeding the development of a water market. Clay Landry of WestWater, a consulting firm, points out that cities can get hold of the stuff much more quickly by buying it from farmers than by building reservoirs and desalination plants. Water contracts are becoming more sophisticated: southern California's cities routinely buy options to guarantee supply in dry years.

Bigger steps in the same direction will be taken in the next few years. Later this month Dirk Kempthorne, the federal interior secretary, is expected to approve a plan, thrashed out by the Colorado River's dependent states, that will regulate water use in times of drought. The agreement encourages interstate trades and allows users to cut back their water use and “bank” the savings in Lake Mead or underground aquifers. It will be the most fundamental change in how the river's water is allocated since the 1920s.

The West has abused its most valuable natural resource for so long that an abrupt change for the better is unlikely. Lawsuits from farmers and environmentalists will rain down. Mexico's claim on the Colorado River must be addressed. As Mark Twain supposedly observed: “Whisky is for drinking, water is for fighting over.”

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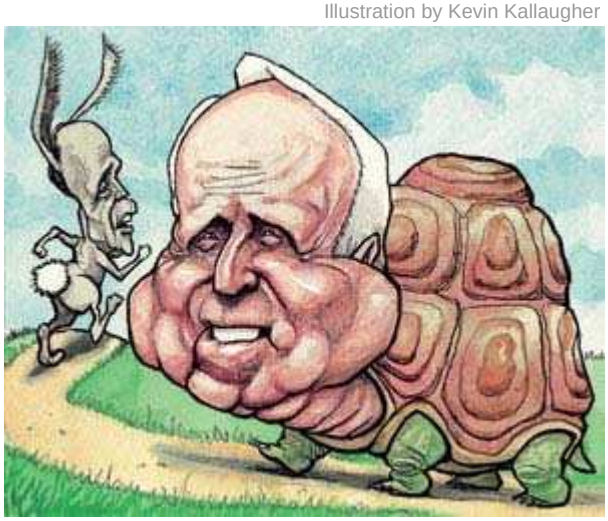
Lexington

The case for John McCain

Dec 6th 2007
From The Economist print edition

Illustration by Kevin Kallaugher



Why the Republicans should take another look at Arizona's senior senator

THERE are all sorts of reasons to be puzzled by the state of today's Republican Party. How did the party of fiscal responsibility become the party of out-of-control spending? How did a party that prided itself on its foreign-policy skills become the author of the fiasco in Iraq? But from the narrow point of view of the election, an even more pressing question arises: how did the Republicans lose their ability to spot star power?

A month before the primaries the Republicans have no idea whom to nominate. Rudy Giuliani? He's ahead in the national polls, but he lags in the early states of Iowa and New Hampshire; and many social conservatives hate him. Mitt Romney? He's ahead in New Hampshire, but he lags in national polls. And what about Mike Huckabee? The latest poll in Iowa shows the preacher from Hope, Arkansas, leading the pack there. No one can predict the outcome with any confidence, since no fewer than five candidates are getting between 10% and 25% of the Republican vote. This confusion is odd for two reasons. The first is that it is the Democrats who are supposed to be the disorganised party. The second is that the Republicans seem intent on ignoring the political star in their ranks. That man is John McCain.

Mr McCain is such a familiar figure that it is easy to forget how remarkable he is. He fought heroically in Vietnam, spending more than five years as a prisoner-of-war, when many other politicians of his generation discovered, like Dick Cheney, that they had “other priorities”. He has repeatedly risked his political career by backing unpopular causes.

Mr McCain's qualifications extend beyond character. Take experience. His range of interests as a senator has been remarkable, extending from immigration to business regulation. He knows as much about foreign affairs and military issues as anybody in public life. Or take judgment. True, he has a reputation as a hothead. But he's a hothead who cools down. He does not nurse grudges or agonise about vast conspiracies like some of his colleagues in the Senate. He has also been right about some big issues. He was the first senior Republican to criticise George Bush for invading Iraq with too few troops, and the first to call for Donald Rumsfeld's sacking. He is one of the few Republicans to propose sensible policies on immigration and global warming.

Mr McCain's qualities are particularly striking if you contrast him with his leading rivals. His willingness to stick to his guns on divisive subjects such as immigration stands in sharp contrast to Mr Romney's oily pandering. Mr Romney likes to claim that his views on topics such as gay rights and abortion have “evolved”. But they have evolved in a direction that is strikingly convenient—perhaps through intelligent design. Can a party that mocked John Kerry really march into battle behind their very own Massachusetts

flip-flopper?

Mr Giuliani gets good marks for character. His record as mayor of New York bespeaks toughness. His performance on September 11th 2001 proves that he can take charge in a crisis. But what about judgment? He chose Bernard Kerik to run the NYPD, made him a partner in his consultancy, and persuaded the White House to nominate him as head of the Department of Homeland Security. Mr Kerik is now facing serious corruption charges. The Democrats will be happy to remind people of other lapses in Mr Giuliani's judgment if he wins the nomination.

The weakness of the two front-runners is persuading many Republicans to turn to Mr Huckabee. Mr Huckabee is indeed an attractive candidate—a good debater and a charming fellow. But he is woefully lacking in experience. He knows next to nothing about foreign and military affairs, and his tax plans are otherworldly. A presidential debate between Mr Huckabee and Hillary Clinton would be a rout.

Worth another look

So why have so many Republicans written off Mr McCain? There are two reasons—one bad, the other more reasonable. The bad reason is that they worry that he is not really one of them. Mr McCain has broken with Republican orthodoxy on everything from tax cuts to campaign finance to immigration. But look at his record more closely and you discover that he is a Republican in good standing. His fights with his fellow Republicans have been driven by his (usually justified) conviction that they were betraying Republican principles. He opposed Mr Bush's tax cuts because he thought they would create a deficit. He led the charge against pork-barrel spending and lobbyists such as Jack Abramoff because he thought they undermined the principle of small government. Immigration is a genuine problem: he is seriously at odds with the bulk of his party on the issue, though many independents would go with his plan.

The more persuasive reason for worrying about Mr McCain is his age. The senior senator for Arizona will be 72 if he takes office in January 2009—two years older than Ronald Reagan when he was inaugurated. But Mr McCain is an extraordinarily energetic 70-year-old, far more full of beans than many younger candidates. (“My philosophy is to just go, go like hell,” he says. “Full bore.”) The American constitution also provides an insurance mechanism against presidential death or illness. Provided Mr McCain chooses a sound vice-president, his many positive qualities outweigh worries about his age.

There are signs that Republicans are swallowing their doubts about Mr McCain. He is gaining some momentum in New Hampshire (he is barely campaigning in Iowa because he has long ridiculed the absurd ethanol subsidies with which many farmers there line their pockets). The *New Hampshire Union Leader* gave him a ringing endorsement this week. He is creeping back up the polls nationally, and is now coming second to Mr Giuliani. Republicans need to keep swallowing. Mr McCain is surely worth another look.

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Correction: Mike Huckabee

Dec 6th 2007
From The Economist print edition

Embarrassingly, we have now failed twice to describe accurately the Fair Tax plan endorsed by Mike Huckabee. This would abolish all federal income and payroll-based taxes and replace them with a national sales tax of 23%. To ease the pain of higher prices, all Americans, even Bill Gates, would receive an annual “prebate” determined only by their family size (not by their income, as we suggested). The size of the prebate would be set so as to ensure that a family at the poverty level which spent all its income would end up paying no net federal tax at all. There are plenty of good reasons to oppose this plan, but none to misrepresent it. Our apologies.

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Brazilian politics

Sex, sleaze and taxes

Dec 6th 2007 | BRASÍLIA
From The Economist print edition

Illustration by Satoshi Kambayashi

What the loss of a key ally means for the Lula government

AS THE president of the Senate, Renan Calheiros was perhaps the most powerful ally of President Luiz Inácio Lula da Silva in Brazil's legislature. Seven months ago, the media, acting on tip-offs from the federal police, accused him of getting a lobbyist for a construction firm to make regular child-maintenance payments to his former mistress. On December 4th Mr Calheiros finally resigned his post.

Thus ended a tenacious rearguard action. As well as the link with the lobbyist, Mr Calheiros was alleged to have used shell companies to buy two radio stations and a newspaper in his home state, and to have paid for a dossier digging up dirt on his enemies in the Senate. He protested his innocence. Then his mistress was photographed for *Playboy* (in the same pose as Christine Keeler, a big-eyed brunette who ended the career of a British minister in 1963). Mrs Calheiros stood by her man. But on December 4th, moments before a crucial vote in the Senate ethics committee that would probably have ended his career, Mr Calheiros gave in.

By resigning his presidency before the vote, Mr Calheiros holds on to his seat in the Senate. (Had he been censured, he would have been barred for eight years from running for office.) That outcome suits the government. Indeed, Mr Calheiros's resignation was probably negotiated with Lula's men. That is because government support for Mr Calheiros was seen as necessary to get through the Senate the renewal of the CPMF, a tax on financial transactions worth 30 billion-40 billion reais ($17 billion-22 billion) a year.

The twists of the Calheiros affair have nonetheless slowed the government down. Getting the CPMF approved has now become a matter of urgency. It is meant to be a provisional tax (and is therefore subject to periodic renewal). But it is also a constitutional measure, requiring a 60% majority. It always generates a tussle. This year the fight is particularly intense—so much so that Lula has cancelled his foreign trips next week so that he can stay in Brasília and twist arms.

The president has formidable political instincts: one of his staffers, who also worked for Brazil's previous president, says that Lula “can just smell politics”. But he does not expend much energy on managing his unwieldy coalition in the legislature. It does not help him that next year there will be municipal elections. Not all of the opposition parties, who have half the Senate seats, want to help swell government coffers before an election year.

The main cause of the government's difficulties, though, springs from Brazil's recent success. Last month the country recorded a small current-account deficit, but overall the economic picture is rosy. In fact, tax revenues are so buoyant that the government is finding it hard to convince congressmen that it needs more money.

One reason for this abundance is that the CPMF makes tax evasion harder, by giving the revenue service information on money moving between accounts. Nuno Camara of Dresdner Kleinwort, an investment bank, has calculated that the government's tax take has already surpassed its own estimates for 2008 by more than 30 billion reais, roughly equivalent to what it might expect to get from the CPMF. “If you compare the situation now with when we introduced this tax, things are completely different,” says Paulo Renato Souza, a congressman for the opposition PSDB party and former education minister.

For its part, the government is trying every legal method it can think of to get the tax renewed—including cutting its rate from 0.38% to 0.3% over the next five years, and exempting low earners. The government has also revived a proposal to limit increases in government salaries to inflation plus 2.5%. “Brazil does need to lower its tax burden,” says Aloizio Mercadante, a senator for the ruling PT, “but suddenly depriving the government of a main source of its revenue is not the way to do it.”

A smoother way to lower the government's future appetite for tax revenue would be to use money from the CPMF to reduce debt faster. Public debt, net of government assets, still stands at 43.5% of GDP. That figure is higher than the average for countries which enjoy the investment-grade credit rating to which Brazil aspires. Though less so than in the past, this debt is still expensive: the government pays a real interest rate of 7%. It is also relatively short-term: some 30% matures every year. Mr Calheiros's continued presence in the Senate, where he still has a great deal of influence, will probably make the passage of the CPMF easier. For the government, some good may yet come from his less than glorious career.

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Argentina and Uruguay

Grinding small

Dec 6th 2007 | FRAY BENTOS
From The Economist print edition

A decade of bad relations?

A MONTH after it opened, the cellulose mill built in Fray Bentos by Metsa-Botnia, a Finnish company, at a cost of $1.2 billion, already makes an impact on the senses. A conveyor-belt takes wood chips up a soaring outdoor ramp into silos where they are pulped and shipped down the Uruguay river, which forms the country's border with Argentina. The process generates a steady whirring sound, a plume of steam from a 120 metre (400 feet) chimney and—only for the first few weeks, the firm insists—a smell strongly reminiscent of boiled cauliflower.

The plant is the biggest single investment in Uruguay's history. It symbolises a long-awaited economic renewal. But for a group of protesters across the river in Argentina, it is a polluting behemoth that will destroy their crops and turn tourists away. They have blocked the international bridge near the factory for most of the past two years. Argentina's government supports them, and the dispute has brought relations between the two countries—whose culture and economies have been inseparable since their founding—to their coolest point in 50 years.

Although construction of the plant was finished by October, Tabaré Vázquez, Uruguay's president, agreed to delay its opening until the Ibero-American summit in early November in the hopes of reaching a deal. But no progress was made at the summit, and a frustrated Mr Vázquez authorised Botnia to begin operating without informing his Argentine counterpart, Néstor Kirchner. When Mr Kirchner found out the next day, he told Mr Vázquez that he had “stabbed the Argentine people in the back”. An Argentine official said that repairing the damage would take “a decade”.

The dispute will be the first foreign-policy test for Cristina Fernández de Kirchner, the president's wife, who succeeds him on December 10th. Ms Fernández has promised to improve relations with fellow members of Mercosur, a South American trade block to which Uruguay belongs, which have been strained.

But she also backs Argentina's claim at the International Court of Justice that Uruguay did not consult Argentina, as it was legally obliged to, before approving the mill. Even if the tribunal rules in favour of Argentina it is highly unlikely to order a drastic remedy, such as moving the plant. The protesters vow to remain on the bridge until Botnia leaves Fray Bentos. Some officials have suggested that Argentina might impose capital controls or trade sanctions on Uruguay, whose small economy is closely linked to its neighbour's. Doing so would make Argentina look like a bully, and might even drive Uruguay out of Mercosur, annoying Brazil, whose government Ms Fernández is courting. The protests have already cost Uruguay $500m, according to its government.

The outcome may depend on the plant's environmental impact. Uruguay's left-of-centre government says it will close the mill if, as protesters fear, it causes acid rain or poisons the river. By contrast, if the factory is as clean as Botnia claims, it will be easier for Ms Fernández to withdraw support for the demonstrators.

Yet even if the governments make it up, restoring friendship across the river will be hard. “There's a lot of sadness and anger,” says Nelson Fernández, a television news director in Montevideo. “The wounds will last for a very long time.”

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Higher education in Mexico

A doctor takes charge

Dec 6th 2007 | MEXICO CITY
From The Economist print edition

Big university, big scientific ambitions

WITH some 160,000 undergraduate students and 21,000 graduate students, Mexico's National Autonomous University (UNAM) is the largest in Latin America and among the largest in the world. It has also long had a reputation as being unmanageable: in 1999 its main campus was occupied for months by students protesting against a timid attempt to introduce fees. Nevertheless, UNAM is the only Latin American university to be ranked by Britain's *Times Higher Education Supplement* in the top 200 in the world.

Last month UNAM chose a new rector, José Narro, a doctor who was previously head of the university's medical school. Dr Narro's selection is important not just to the academy, but to Mexico. As Olga Hansberg, a member of UNAM's board of governors, says, “What happens in the country is reflected in UNAM, and vice-versa.” The institution matters not just because of its size but also because it was, for years, an engine of social mobility, a place where students from provincial secondary schools could mix with the children of politicians and those of the metropolitan middle class.

In recent years, UNAM's role has become less central, as decent competitors have emerged in the social sciences and low-quality private diploma mills have proliferated in the provinces. Nowadays, many of the children of the elite head to the capital's top private universities to study economics or political science. But UNAM remains the only educational institution in the country that does high-quality basic research in the sciences.

UNAM owes this distinction largely to the fact that it has control over its own budget, although this comes from the federal budget. Dr Narro was chosen by the university's board of governors, free from the influence of the national education bureaucracy and the powerful, reactionary teachers' union that controls primary education in Mexico.

Although Mexico's wages remain far below those in the United States, it has been bleeding manufacturing jobs to Asia partly because it lags in innovation. Promising signs exist: Mexico recently inaugurated what aspires to be a world-class genomics research institute. And the Tecnológico, a private university based in the northern industrial city of Monterrey and specialising in engineering and technology, has planted campuses across the country. But, as its rector says, its research is focused on practical applications for business.

Places to do basic research outside UNAM remain few and far between. As the pre-eminent voice in Mexican higher education, it is now Dr Narro's task not only to improve his own university, but to try to get others to compete with him. His primary patient is in relatively good shape; it is the other patients, outside his “university city”, who need attention.

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India

Don't mention the massacre

Dec 6th 2007 | AHMEDABAD
From The Economist print edition

But it still colours Narendra Modi's campaign for re-election in Gujarat

AFP

AS A cheerleader for the emerging India, a giant democracy with—at last—an economy to match, Narendra Modi is a disgrace. His six-year leadership of Gujarat, a booming western state, is widely cited as a paragon of economic management. But double-digit growth is not all that Mr Modi—who is seeking re-election in a poll due to begin on December 11th—is alleged to have orchestrated.

There is also the small matter of 2,000 murdered Muslims, victims of a 2002 pogrom carried out by his Hindu-nationalist followers with the collusion of Gujarat's bureaucracy and police. This week the widow of a Muslim politician called Ahsan Jafri, whose limbs and genitals were hacked off and the rest of him burned alive, was due to file a petition in the Supreme Court, accusing Mr Modi of mass murder. There is little justice for Muslims in Gujarat. Only eight people have been convicted over the pogrom, mostly in neighbouring states. In Gujarat, some 2,000 cases remain pending.

A small matter, however, is just how the pogrom is viewed in Gujarat, the birth-place of Mahatma Gandhi, and a bastion of prohibition, vegetarianism and gnat-respecting Jains. Its last election, later in 2002, gave Mr Modi a thumping majority, biggest in those districts where the bloodshed was worst. Mr Modi's campaign that year exploited anti-Muslim sentiment. He foamed and raved against Pakistan's leader, Pervez Musharraf—meaning, his audiences knew, scheming Muslims in their midst. Many considered—and consider—the pogrom to be a legitimate act of revenge against a poor minority making up 9% of Gujarat's population. It was organised by supporters of Mr Modi's Bharatiya Janata Party (BJP) after 58 Hindu activists were killed in a fire on a train for which, on scant evidence, Muslims were blamed.

This time Mr Modi's campaign has been more sober. He has unleashed the odd rant against “terrorists”, and a few barbs at Mr Musharraf. But the BJP'S leader has been much keener to trumpet Gujarat's recent economic performance—including growth of 11.5% last year. The change of tack may be because he is chary of the contempt the outside world holds for him. In 2005 America revoked his visa. EU countries have also denied him diplomatic status. This has been damaging to his ambitions to lead the BJP, and India. Mr Modi is already its most globe-trotting state boss. This year he has visited China, South Korea, Japan and Switzerland.

But elections in India are not won by leading trade delegations—even in Gujarat, which has 24% of India's coastline and a proud commercial tradition. Moreover the slogan Mr Modi is most associated with, “Vibrant Gujarat”—the name of a biennial trade fair he has staged—recalls the ill-fated “India Shining” campaign run by India's last BJP-led government for the general election in 2004. It was turfed out by the masses for whom India did not shine. Many in the Congress party, which leads the coalition that won that election, predict that Mr Modi will suffer the same fate.

His camp is certainly unhappy. Leaders of two powerful castes, the Patels and Kolis, which usually vote BJP, have rebelled against Mr Modi. They dislike his autocratic ways—and, perhaps, his intolerance of corruption. A total of 50 former BJP members of the outgoing assembly have refused or been denied the party's ticket. Eight are instead standing for Congress. The Vishwa Hindu Parishad, a Hindu group heavily implicated in the 2002 slaughter, is also upset with Mr Modi. Indeed, there are many in the BJP who would like to see him fall. With a general election due by May 2009, India's main opposition party is suffering a crisis of ideology and leadership. Another thumping win for the divisive Mr Modi would strengthen his claim to supply both.

These divisions have given Congress hope. Its supporters also point out that Congress did better in Gujarat in the 2004 general election than in 2002. Its leader, Sonia Gandhi, has campaigned hard in Gujarat. A strong showing by Congress would be a bitter blow to the BJP. It might even embolden Mrs Gandhi to call a general election early next year, or at least to push through a controversial nuclear co-operation deal with America over the objections of the government's Communist allies. As the Communists have said they will forsake the government if the deal survives, this might come to the same thing.

The BJP, however, remains the favourite. In 2002 it won 126 out of 182 seats. Gujarat's illegal bookmakers, famed for their prescience, expect it to win again, with a smaller majority. Betting has been heavy. Meanwhile, few commentators have dwelt on the poll's most depressing aspect: Congress's own careful reluctance not to mention the 2002 massacre—let alone Mr Modi's alleged part in it. This makes electoral sense. Attacking Mr Modi for failing to protect Muslims might remind Gujaratis why they used to like him so much.

After all, last month, in a brave investigation into the pogrom, an Indian magazine, *Tehelka*, published transcripts of Gujarati Hindu-nationalists confessing to hideous murders and rapes. One alleged that Mr Modi had granted them three days to do this work unimpeded by the police—which is in fact what happened. No action has been taken against them. Instead, senior Congress figures have accused *Tehelka* of being in cahoots with the BJP. Gujarati bookies responded to its report by shortening the odds on Mr Modi.

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Sri Lanka

Burning bright

Dec 6th 2007 | COLOMBO
From The Economist print edition

The Tigers and the government match outrage with outrage

Reuters

Prabhakaran's fearful symmetry

Get article background

THE annual speech by Velupillai Prabhakaran, chieftain of the Liberation Tigers of Tamil Eelam, to mark “Heroes' Day” on November 27th is anxiously awaited by Sri Lankans. The elusive separatist leader often uses it to reveal his macabre or heroic plans for the coming months. This year, however, there were no prizes for guessing his intentions. Both the Tigers, fighting for a Tamil homeland (“*eelam*”), and the hawkish government in Colombo had already made their positions plain: the 24-year-old war, which has claimed more than 70,000 civilian lives, will be stepped up.

A few hours before Mr Prabhakaran's speech, the air force bombed the Tigers' radio station, killing nine civilian staff. So it was circulated by telephone and the internet. Combative as ever, Mr Prabhakaran declared that it would be “naive” to expect any peaceful solution from the Sinhalese-dominated government, and exhorted Tamils to fight on.

It did not take him long to translate words into action. The next day he sent a disabled Tamil woman with a bomb strapped to her chest in a failed attempt to assassinate an ethnic-Tamil government minister seen as a “traitor” to the cause. The same day a bomb killed 20 people in a shopping mall in Colombo. The violence seemed a rebuff to foreign governments, which had been asking the Tigers to stop political assassinations and terrorist attacks, to win world support for a decent deal for the Tamils.

As in the past, the Sri Lankan government soon squandered some of the sympathy it was due. It randomly arrested 2,554 Tamils in and around Colombo and put 400 of them in Boosa, a detention camp for terrorist suspects. Human-rights groups were outraged. On December 4th a petition was filed in the Supreme Court. Recalling the court's angry response in June when it had summarily ejected 376 Tamils from Colombo, the government hurried to free 2,352 people that very day.

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Bangladesh

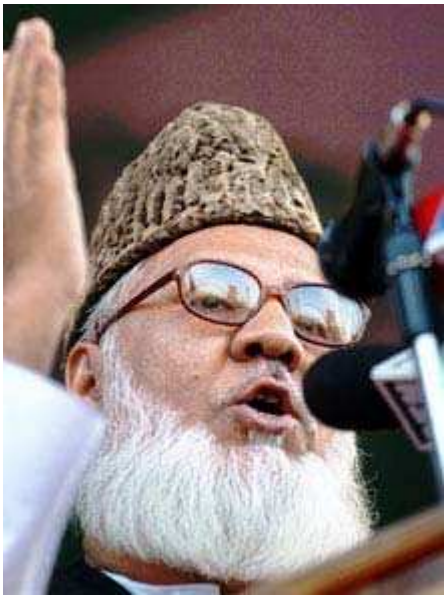
Guilty at birth?

Dec 6th 2007 | DHAKA
From The Economist print edition

The politicians are still fighting the war of independence, 36 years on

Get article background

AFP



Nizami's youth comes back to haunt him

THE army-backed interim government running Bangladesh since January has been struggling to bring corrupt politicians and businessmen to trial. Now it faces mounting pressure also to prosecute those involved in “war crimes” during the country's war of independence in 1971. In recent weeks, the big political parties—in a rare display of unity—have jointly demanded that the government ban “war criminals” from contesting the parliamentary election due late next year.

In effect, this would transform the government's “minus-two” strategy—the removal from politics of Sheikh Hasina Wajed and Khaleda Zia, leaders of the two biggest political parties—into “minus three”. Talk of war-crimes trials leads inexorably to one person, Motiur Rahman Nizami, leader of the third-largest party, Jamaat-e-Islami. Shahrier Kabir, the head of the Nirmul Committee, a group campaigning for the trial of the 1971 war criminals, says he has “no doubt” that the case against Mr Nizami and his associates would stand up in a court of law, and wants the government to set up a tribunal.

Bangladesh became independent in December 1971, after a nine-month war that pitted Bengali-dominated East Pakistan against West Pakistan. The West's army, with its appeal to Islamic unity, had the support of many of East Pakistan's fundamentalist parties. The most extreme of these was the Jamaat-e-Islami, whose student wing became the main source of a pro-army paramilitary body called Al Badr, which was led by Mr Nizami. Its members are alleged, among other atrocities, to have abducted and murdered dozens of senior journalists and academics.

Frequent calls for war-crimes trials have been ignored. This time, however, the unelected government's hand may be forced by the new unity among the big parties, and by support for the demands among parts of the army. The army may want only to clip Jamaat's wings and cleanse it of the taint of 1971. Many civilians, however, are motivated by distrust of religion-based politics.

Time is running out. Many witnesses, and many of the accused, have died. The head of the interim administration, Fakhruddin Ahmed, has said that the government would welcome prosecutions initiated by private citizens. But citizens' groups insist that the state must act as prosecutor in crimes of such magnitude.

So far, the interim government has not faced a serious political challenge. But election boycotts are a common tactic in Bangladesh, and could be used to put pressure on it—provided, of course, that its military backers decide to go ahead with the polls. Trials relating to crimes committed so long ago may seem irrelevant in a country facing so many immediate disasters. It is still reeling from Cyclone Sidr and devastating floods. But for those demanding trials, Bangladesh's very identity is at stake. Many agreed with Zafar Sobhan, a political commentator, when he wrote recently that the immunity enjoyed by Jamaat since 1971 is the country's “original sin”, polluting the body politic far worse even than financial corruption. Is there another country, he asked, where those, like Jamaat, “who opposed the birth of a country or those who collaborated with its enemies” have been rehabilitated?

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China's new labour law

Union of the state

Dec 6th 2007 | BEIJING
From The Economist print edition

The party throws a sop to the workers

LABOUR conditions in China can be notoriously lousy. Reports abound of sweatshops, workers' protests and this year even of officials condoning the luring of children into slavery. A new law on employment contracts, coming into effect on January 1st, will in theory improve workers' lots, but is creating more headaches.

The law is supposed to provide greater job security. Workers with ten years or more of service will have open-ended contracts and companies will have to inform unions before sacking anyone. Employers fear the law will mean bigger severance payments. The unions will also have the power to negotiate collective contracts.

But the law has many detractors. Some allege it will take China back to the “iron rice bowl” era of Maoist days when jobs were for life and the economy was crippled by a lack of incentive. Others, conversely, argue that it will strengthen state-controlled unions but do little for downtrodden workers.

Both sides agree it has loopholes, which companies have been racing to exploit. The Chinese press has cited numerous attempts by enterprises to circumvent the law. Huawei, China's best-known maker of telecommunications equipment, has attracted special notice. It has been accused of asking some 7,000 employees with more than eight years of service to resign to compete for new short-term posts. The aim, allegedly, was to reclassify them as new employees.

The new law has been a boon to the All-China Federation of Trade Unions (ACFTU), an umbrella for all China's unions that is in effect an arm of government. In recent years it has seen its power eroded as state-owned industries have collapsed and the private sector has flourished, eschewing niceties such as unions and Communist Party cells.

After persuading Huawei, which denied trying to evade the law, to revise its plans, the ACFTU this week issued a stern warning to other companies not to try anything similar. It said a “small number” were laying off large numbers of workers in advance of the new law. This, it said, was threatening the success of efforts to build a “socialist harmonious society” and should be “resolutely stopped”.

But for all the ACFTU's propaganda, few expect it to emerge as a strident new champion of workers' rights. Independent trade unions will remain in effect illegal. China has no plans to reintroduce the right to strike, which it abolished in 1982 as it began to fret about the example set by the Solidarity trade-union movement in Poland. The role of the ACFTU, in the government's eyes, is to prevent worker unrest.

One of the main aims of the new law is to counter the widespread complaints in China that the country has been over-zealous in its embrace of capitalism. These complaints became particularly shrill in June, after reports emerged that local officials in the northern province of Shanxi had allowed rural brick kilns to lure hundreds of people, including children, to work in slave-like conditions. The new law had been publicly debated long before the scandal surfaced. But its critics say the government rushed to push it through the rubber-stamp legislature in June in order to assuage public anger over the kilns.

One of the law's most outspoken critics is Dong Baohua of the East China University of Political Science and Law, who helped draft China's first labour law in 1994. Among Mr Dong's complaints is that the new law does nothing to improve the lot of tens of millions of migrant workers from the countryside. They make up most of the unskilled labour in urban areas and are the most frequent victims of poor labour conditions. China's official

trade unions have yet to build a network among such workers. Nor will the law help people such as Shanxi's slaves, who suffer not from a lack of legal protection but from poor enforcement. Mr Dong also says the new law will not cut the number of labour disputes, which have become increasingly common in recent years (see chart).

For all the ACFTU's fulminations, critics say many companies will continue efforts to evade the law or else simply ignore it. But in an interview published by one of China's biggest-circulation newspapers, *Southern Weekend*, Mr Dong argued that China could also end up like France, with its economy numbed by costly employment benefits and strikes triggered by any effort to reform them. That, he said, would be the “most terrifying” outcome for China. The party would agree.

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China and Hong Kong

Good-bye Kitty

Dec 6th 2007 | BEIJING
From The Economist print edition

Confusion over who calls the shots in Beijing. But not in Hong Kong

AFTER meeting China's president, Hu Jintao, last month, America's defence secretary, Robert Gates, left Beijing with promises of greater co-operation between the two armies, including the installation of a hotline. But China's top brass is not making it easy to fulfil Mr Hu's hopes of growing friendship. A fortnight later it unexpectedly cancelled a Thanksgiving Day port call in Hong Kong by *Kitty Hawk,* an American aircraft-carrier, and several other vessels.

The incident has again raised questions about how much China's army tells its civilian leaders. In January the foreign ministry was caught off-guard by the army's test of an anti-satellite weapon. This recalled the confusion in 2001 after an American spy plane had collided with a Chinese fighter.

Similar confusion appears to have broken out again. The White House said China's foreign minister, Yang Jiechi, had told George Bush that the *Kitty Hawk* incident had been a “misunderstanding”. A foreign-ministry spokesman in Beijing soon denied this. But he gave no explanation. On December 4th the foreign ministry returned to the fray, expressing “grave concern” over the *Kitty Hawk*'s decision to sail back to Japan through the Taiwan Strait, purportedly because of the weather. American carriers normally avoid the strait in deference to China's sensitivities.

China's military or civilian officials had reasons to express displeasure with America: a high-profile meeting in October between President Bush and the Dalai Lama; or the Pentagon's plans to help Taiwan upgrade its missile defences. They may also have wanted to keep prying American eyes away from big wargames China was staging in the region.

Or maybe they just wanted to teach America who is in charge in Hong Kong these days. Hong Kong's democrats need no reminding of this. Their champion, Anson Chan, a former top civil servant, won a by-election on December 2nd in a fiercely contested race with a Beijing-backed candidate, Regina Ip. Mrs Chan's campaign platform called for full democracy in Hong Kong in 2012. But voters know this is a pipedream. As China sees it, sovereignty over Hong Kong includes the right to rig elections as well as to keep American warships guessing.

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Kazakhstan and the OSCE

Joining the club

Dec 6th 2007 | ALMATY
From The Economist print edition

Violator becomes arbiter

FOUR years of intense diplomacy bore fruit on November 30th when the Organisation for Security and Co-operation in Europe (OSCE) awarded its rotating chairmanship in 2010 to Kazakhstan. Since the decision, made at a meeting in Madrid, Kazakhstan's people have been treated to euphoric outbursts by their usually reserved top officials. Kanat Saudabayev, the state secretary (government spokesman), credited the remarkable achievement above all to the extraordinary wisdom of Kazakhstan's people when they elected the “truly God-sent Nursultan Nazarbayev” as their president in 1991.

Such reverence to Kazakhstan's authoritarian head of state may well be a precondition of political longevity. But it is hardly what one would expect to hear in a country ready to lead a 56-member organisation that monitors human rights and elections. Human Rights Watch, a lobbying group, said the choice of Kazakhstan would undermine the integrity of the OSCE's human-rights principles.

Indeed, the OSCE itself has so far failed to judge a single election in Kazakhstan free and fair. Yet the Kazakhstani leadership has now pledged to uphold and to strengthen its principles, in Mr Saudabayev's words, “from Vancouver to Vladivostok”. Kazakhstan will become the first former Soviet republic to chair the OSCE. Dosym Satpayev, an independent political analyst, reckons its poor human-rights record and spotty democratic credentials were trumped by geopolitical calculation and hopes of energy co-operation with the oil-rich country.

Mr Satpayev says that denying Kazakhstan the coveted honour might have alienated its leaders and driven it into closer ties with China, with which it is already linked through the Shanghai Co-operation Organisation, a security forum. Or it might have nudged the country even more firmly into the camp of Russia, Kazakhstan's staunchest supporter in OSCE decision-making councils. The chairmanship was the price paid to keep Kazakhstan on good terms with the West and to avoid further antagonising Russia, which is already squabbling with America over the course the OSCE should take.

Whatever happened behind the scenes in Madrid, the political elite in Kazakhstan is jubilant that, as it sees it, the country has at last been accepted as an equal player in global affairs because of its democratic and free-market reforms. However, Marat Tazhin, the foreign minister, has stressed the great weight on Kazakhstan's shoulders if it is to live up to the OSCE's obligations. He promised a change of the election law by 2010 and a freer press. With Kazakhstan facing greater international scrutiny, the opposition may at least now have a chance to have its voice heard. Even so, Mr Satpayev concludes, “The OSCE has won tactically, but lost strategically.”

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Japanese politics

Like a game of go

Dec 6th 2007 | TOKYO
From The Economist print edition

Forget the national interest, Japan's parties are locked in a tactical fight

THE saga that has brought politics in Japan to a halt is nearing its crisis. In July the Democratic Party of Japan (DPJ) won control of the upper house of the Diet (parliament) from the Liberal Democratic Party (LDP), which still controls the lower house and governs in coalition with New Komeito, a junior partner. Unlike counterparts in many democracies, Japan's upper house has formidable powers. The constitution never envisaged a split parliament, with the upper house able to veto nearly every government bill. The government could overrule a veto with its two-thirds' majority in the lower house. Yet this weapon has not been used in 50 years, and may backfire, particularly if the public deems its use unwarranted.

This week the upper house began deliberating a bill passed last month that would send the Japanese navy back to the Indian Ocean to provide fuel to American-led operations in Afghanistan. Hardly central to the “war on terror”, the mission was still the most visible proof that Japan was showing the flag. But it was hurriedly recalled on November 1st, when the DPJ refused to allow an extension to its mandate.

Internationalists in both parties are embarrassed that Japan, yet again, appears weak-kneed over its international responsibilities. Nevertheless the DPJ's leader, Ichiro Ozawa, is playing hardball. He vows to oppose the bill, despite dissent even within his own party. His predecessor as leader, Seiji Maehara, says that to rely on a United Nations mandate to send the army abroad, as Mr Ozawa insists Japan should, “is to give Russia and China power of veto over Japan's foreign policy.”

Now comes an intense tactical game, which Yasuo Fukuda, prime minister since September, must win to hang on in power. Mr Fukuda has already extended the Diet's current extraordinary session once, until December 15th, so that the refuelling bill can be deliberated in the upper house. But that is not enough time. He might have been tempted to let the bill lapse. He does not believe Japan should join every American-led “coalition of the willing”. Besides, in early November he held private talks with Mr Ozawa about forging a “grand coalition”, for which he might have jettisoned the bill. Yet Mr Ozawa's complicity shocked his party's executive. He resigned as DPJ leader, but was hurriedly reinstated for lack of an alternative.

Mr Fukuda has since been to Washington, DC, where he assured Mr Bush he would make every effort to send the ships back to the Indian Ocean. With honour at stake, the prime minister will probably extend the Diet session one last time, waiting for the upper house either to reject the refuelling bill or to sit on it for a full 60 days, which amounts to the same thing. He will then try to ram the bill into law using the coalition's supermajority, and the upper house will probably condemn the government with a motion of no confidence.

Until recently, such a motion was thought dramatic enough to have the prime minister dissolve the government and call a general election. But the game is fast changing. For a start, though no fervent public support exists for the refuelling mission, there is no passionate opposition. And despite a growing defence-procurement scandal, the DPJ has failed to implicate LDP politicians—even Fukushiro Nukaga, now finance minister, to whom scandals usually stick like a faithful dog. Lastly, not everyone in the DPJ really wants a snap election. Though the party is certain to pick up seats, DPJ candidates have yet to be selected for many districts, and even then only a miracle would grant the party a lower-house victory. The odds are rising that Mr Fukuda might shake off the upper-house censure, explain to the country that he tried his best to secure co-operation, and continue as prime minister.

If so, the refuelling saga will prove a mere skirmish before real battle is joined over next year's budget and the livelihood issues that ordinary Japanese care about— at a time, Sadakazu Tanigaki, the LDP's policy chief, points out, of a soft economy at home and a darkening economic outlook abroad. The Diet's ordinary session will open in January, and the government must pass a budget before the fiscal year beginning on April 1st. Though the lower house can do that alone, the upper house must also approve a raft of bills required if the budget deficit is to be financed and government salaries and contracts paid.

Again, Mr Fukuda will present himself as a model of reasonableness, listening to opposition demands to boost welfare and tackle regional inequalities. Yet meeting such demands would bust the budget. And there will be pressure to pass bills swiftly. Perhaps talk of a grand coalition will resurface. More likely, a budget clash will loom, and Mr Fukuda will use the supermajority once again, this time to keep the government running. If the public blamed him for the confrontation, Mr Fukuda might then feel the need to dissolve the government. Mr Fukuda intends to prove he can be more than a stopgap “caretaker” prime minister. But most lower-house politicians expect an election as early as April, and many have run up their campaign posters in readiness for a January snap election—just in case.

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God and the Olympics

The other sports ministry

Dec 6th 2007 | BEIJING
From The Economist print edition

The Beijing Olympics raise tricky questions of religious freedom in China

“CHINA is a country with religious freedom and respects every religion,” boasts the website of Beijing's Olympic games organisers. Expecting an influx of God-fearing athletes at next year's event, they will even cater to their spiritual needs. But China's wariness of foreign clergy is hard to overcome.

In line with the International Olympic Committee's requirements, officials are setting up a religious centre in the Olympic village. Athletes will be able to attend services of their own faiths and seek counselling from chaplains. But, breaking with usual practice, China has not invited foreigners to serve as chaplains. The staff at the centre will belong to China's state-approved churches.

Catholic priests from overseas were bound to be a problem. There have been some signs of a thaw in relations with the Vatican. This week Chinese clergy in the southern city of Guangzhou ordained the fourth bishop loyal to the Vatican to be appointed in China since September. But China has no diplomatic ties with the Vatican and several Catholic priests are in prison for refusing to co-operate with the state-controlled church.

It also sometimes jails and harasses those Chinese Protestants who prefer to worship informally in unregistered “house churches”. Foreign Protestants initially received positive signals. The state-supervised church invited them to help train Chinese clergy. But in March Beijing's Olympic organising committee told them that the foreigners themselves would not be invited to perform religious duties. No reason was given. Teams may still bring their own chaplains with them. But at past events many countries have not included chaplains in their own delegations, assuming that the host country would invite foreign clergy.

China is uneasy about religious activities at the games. The Olympics normally draw many foreign Christian missionaries who, unlike the official chaplains, try to spread their faith. Proselytising is banned in China. Beijing's Olympic organisers avoid public comment on the foreign-chaplain issue, saying only that the religious needs of athletes will be met. In 2000 China's state-run news agency, *Xinhua*, reported that a Chinese Buddhist had been invited to serve as a chaplain at the Olympics in Sydney. So such needs should be familiar to Beijing's games organisers.

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Iran's nuclear programme

What's not to celebrate?

Dec 6th 2007
From The Economist print edition

AP

Mahmoud Ahmadinejad thinks Iran is home free

AS FAR as George Bush is concerned, “Iran was dangerous, Iran is dangerous and Iran will be dangerous” if it gets sufficient knowledge to build a nuclear bomb. But his words this week were barely audible above the clamour detonated by a new National Intelligence Estimate (NIE), the collective judgement of all 16 of America's intelligence agencies, that Iran had halted its nuclear weapons programme in the autumn of 2003. To Iran's irrepressible president, Mahmoud Ahmadinejad, the report was a “great victory”—an own thumb-in-the-eye for the Great Satan.

At the very least, the spooks' reassessment of Iran's ongoing nuclear work seems likely to put a brake on already slow diplomatic efforts through the United Nations Security Council to pressure Iran into suspending its enrichment of uranium and its efforts to produce plutonium. Although a new resolution promising stiffer sanctions on Iran may still be circulated soon, both Russia and China say that the new NIE version of events means at a minimum a bit of a rethink.

Yet it's a funny thing. Although the new judgement on Iran's weapons work contradicts a 2005 NIE view that Iran was tinkering on regardless, the intelligence folk have not changed their prediction that Iran could have a nuclear weapon by around 2015. So does Iran have such military ambitions? And if so, why the presumed four-year pause?

When intelligence types talk of Iran's weapons programme, what they mean is work to design a nuclear warhead, master the mechanics to make it go bang and covertly produce the highly-enriched uranium or plutonium for its explosive core. In 2002 much of Iran's hitherto-secret uranium work, including its centrifuge-enrichment plant at Natanz, was exposed by an opposition group. Iran then came under mounting pressure to suspend such work and let in inspectors from the International Atomic Energy Agency (IAEA). The intense scrutiny, the intelligence analysts think, caused Iran to halt its other nefarious activities too.

Yet, as a leaked speech by a senior Iranian nuclear official later made clear, Iran was not abandoning enrichment, only ducking and weaving to get the world off its back. Uranium and plutonium work, it insists, are legal under the Nuclear Non-Proliferation Treaty—for peaceful purposes. The enrichment go-slow ended abruptly in 2006, however, with the election of Mr Ahmadinejad. Iran now has 3,000 centrifuge machines up and running at Natanz.

Does that matter if all the other work has stopped? Producing enough plutonium or highly enriched

uranium (power reactors use the low-enriched sort, but this can be enriched to weapons grade by running it through the centrifuges a few more times) is the chief obstacle to building a bomb. Halting the obviously illegal work, while pressing ahead with enrichment in plain sight would still leave Iran with a weapons option, argued George Perkovich of the Carnegie Endowment for International Peace, a Washington think-tank, back in 2005. The new NIE assessment comes to a similar conclusion.

Iran claims never to have had any intent to build weapons. The NIE disagrees. America is even more firmly convinced on the evidence it has obtained—some of it quite recently—that until 2003 Iran's government was trying to build a nuclear weapon. It was “probably worse than we thought”, says Stephen Hadley, Mr Bush's national security adviser.

It always was implausible that a country without a single working nuclear-power reactor would spend so heavily on, and be so secretive about, uranium enrichment. The IAEA still wants to know more about unexplained traces of highly enriched uranium found by inspectors and a document Iran had for years, but claims never to have made use of, showing how to shape uranium metal into hemispheres, a technique useful only for weapons. Inspectors also want Iran to account for drawings dated 2003 from a laptop provided to America by a defector the following year that show design work on a missile cone that could accommodate a nuclear warhead. Iran dismisses such evidence as “baseless”.

The latest NIE assessment expresses “moderate confidence” that Iran's weapons pause continues. Israel's defence minister, Ehud Barak, this week begged to differ. He acknowledged that the odds on an eventual American military strike against Iran's nuclear facilities have lengthened, but said Israel would not lower its guard “because of an intelligence report from the other side of the world, even if it is from our greatest friend.” Intriguingly, while the director-general of the IAEA, Mohamed ElBaradei, expressed himself pleased with the NIE reassessment, the *New York Times* quoted a senior official close to the agency as expressing more scepticism about what Iran is really up to.

So where does diplomacy go from here? The NIE suggests that the weapons pause may indicate more of a cost-benefit approach to Iran's nuclear ambitions, and that some cleverer combination of scrutiny and pressure, combined with juicier offers to take account of Iran's security, prestige and other goals might prompt its regime to steer clear of further weapons work—though it could reverse course at any time. Yet that has been the basic diplomatic strategy all along: get Iran to halt enrichment and negotiate inducements, including co-operation on other advanced, but less dangerous, nuclear technologies, to make the suspension permanent. Mr Ahmadinejad firmly rules this out. Ironically, this week's NIE will make it harder to muster the diplomatic wherewithal to press him to change his merry tune.

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Iraq

In dribs and drabs

Dec 6th 2007
From The Economist print edition

Refugees are returning to Baghdad, but not always for encouraging reasons

AFP

A magic bus for some

IT WAS a stirring sight. A score of buses piled with luggage and decked with Iraqi flags set out from Damascus on November 27th, carrying hundreds of Iraqi refugees for the overnight journey to Baghdad. The Iraqi government, which paid for the convoy, says there will be many more. Improved security in the capital brought about by the "surge" of American troops, it claims, has prompted a mass homecoming of Iraqis who fled the sectarian death-squads that once terrorised the city.

According to the Iraqi Red Crescent, a sister body of the International Red Cross, some 25,000 Iraqis returned from Syria alone between mid-September and the end of last month. Others say the number is closer to 60,000. But this is only a fraction of the more than 2m Iraqis estimated to have fled abroad in the past four years. Moreover, it is unclear whether everyone is returning for the best of reasons.

By virtually every account, Baghdad is much safer than it was a few months ago. Estimates of civilian casualties are incomplete, but one independent tally suggests that the national death toll has dropped by over 50% since the summer, and the capital has seen some of the most dramatic improvements. Baghdadis who a few months ago were hunkered down in their houses say that they are now travelling across town to work and dining out at night. Women have abandoned the heavy robes urged on them by religiously zealous militias for a simple headscarf and jeans. Young men are taking down the makeshift barricades that used to seal off streets from car-bombers or raiders.

But this is not necessarily the reason why Iraqis are returning. Neighbours such as Syria, which originally welcomed Iraqis, have found themselves overwhelmed and are now starting to cut off services. Few of the refugees have been able to find enough work to support themselves in exile. Some have simply run out of money.

Most of the host countries seem unwilling to risk the international opprobrium that would accompany rounding up Iraqis and sending them back to a war zone. Instead, they find other ways to make it unpleasant to stay. According to a report released by Human Rights Watch, a lobby group, desperate Iraqis who have fled from Syria to its more prosperous neighbour, Lebanon, are often caught by the authorities and offered a stark choice: opt for home "voluntarily" or rot in prison indefinitely. Iraqis in Egypt who want to renew valid visas claim they are met by sneering officials who tell them they are not wanted any more and demand extortionate fees to process their papers.

Moreover, the return of the refugees yields its own set of problems. Many will find their homes are now occupied by others. American military officers complain that the Iraqi government is not prepared for this looming crisis. The Red Crescent fears the refugees who return will simply join the ranks of the 2m-plus internally displaced Iraqis it estimates are scattered across the country.

Still, the return of the refugees fits into a general weariness with sectarian hatred. One member of the Mahdi Army, who spent the last year securing his neighbourhood from Sunni insurgents by chasing away any Sunni who might sympathise with them, now says he is contacting his former neighbours and offering them pledges of safety if they return. This fragile goodwill may dissipate, though, if the government does not apply itself to finding homes for its displaced citizens.

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Africa and Europe

A desperate suitor

Dec 6th 2007 | LISBON
From The Economist print edition

After China and America, it is Europe's turn to woo Africa

IT IS a coincidence, but an appropriate one nonetheless, that Europe should try to relaunch its relations with Africa in Lisbon. It was from here, in 1415, that Portuguese ships first set out to begin the European exploration and conquest of the dark continent; and it will be here on December 8th that politicians from 53 African and 27 European countries will gather at a summit to bury the old colonial relationships in favour of something more modern and "equal", as the Europeans like to put it.

The get-together is the idea of the Portuguese, who currently hold the EU presidency; they see this first EU-Africa summit since 2000 as the capstone of their six-month tenure. They accept that the summit carries a "political price": the one-man-against-the-rest EU split caused by the refusal of Britain's prime minister, Gordon Brown, to attend, in protest against the presence of Zimbabwe's president, Robert Mugabe. But, the Portuguese say, they had little option. China, and others, have forced their hand.

For the Europeans are increasingly worried that they are losing both trade and clout on a continent that they used to regard as their own backyard. Over the past five years Europe has watched with a mixture of shock and awe as resource-hungry China has swept across a grateful continent, taking oil and minerals in exchange for anything the Africans want, be it money now, money later, ports or roads. African-Chinese trade has increased five-fold over that time to more than $50 billion last year. Europe's long-standing links mean that it is still Africa's biggest trading partner, but the Chinese are catching up fast. As a stark example of China's new muscle, in October the Industrial and Commercial Bank of China paid $5.6 billion for a 20% stake in Standard Bank of South Africa—the biggest single investment ever made on the continent.

And the Chinese are not the only newcomers. India has been buying up oil and mineral concessions in countries such as Sudan and Nigeria. America has revived its interest in Africa: it wants to take 25% of its oil supply from there to decrease its dependence on the Middle East. America has also been recruiting new allies, such as Mali and Ethiopia, in its fight against Islamist terrorism on the continent.

All this has left Africa's leaders in the novel position of being able to pick their friends rather than being dictated to by others, be they white development economists or the IMF. And they are enjoying every minute of it. As Shamsudeen Usman, Nigeria's minister of finance, says: "Nigeria is becoming a beautiful bride. What is happening is the Chinese, the Koreans, everyone is coming around, and if European companies do not wake up, they will see that most of the best businesses are taken. For us, really, whoever gives the best terms, the best conditions, and is willing to come and invest, those are the ones that we'll do business with."

Europe, used to privileged access to African markets and politics, has been left floundering by the new competition. Europeans complain that China damages Africa by not linking its loans and investments to improvements in government and human rights, as the worthy Europeans do. But Africans are dismissive: as one official says, "Europe is jealous. They say we have gotten a new colonial master, but our old one wasn't so good."

Getting hung up on democracy

The Lisbon summit will thus be an explicit counterpoint to the China-Africa summit of November 2006, when China cemented its new relationship with a promise of yet more money. Now the Europeans will try to woo the beautiful bride and her dowry of hydrocarbons back from Beijing. Europe's goodies will be a mix of concessions and inducements.

The main concession, a nod to the Chinese, is to be less critical of African regimes that are a bit light-

fingered, or disdainful of human-rights. João Cravinho, the Portuguese minister responsible for the summit, contends that the Europeans have been “excessively simplistic” in insisting on European models of government for Africa. Instead, Europe will in future “focus on the essence of government, rather than the forms, [and be] less hung-up on particular forms of decision-making.”

Getting into the spirit, Europe overturned its own travel ban on Mr Mugabe, a complete stranger to decent behaviour, to allow him to attend the summit, even at the expense of losing the British government. Mr Mugabe will be lectured on his sins—and is then free to join in the cuddly group photographs. This is the “political price” that Europe feels it has to pay for warding off the Chinese. Sudan's president, Omar al-Bashir, will also be at the summit, but there are no plans to nag him about his army's brutality in Darfur.

Of the new inducements, trade deals called Economic Partnership Agreements are the ones Europe thinks will help Africa most. The EU argues that these are good for development, offering African countries full access to the European market while allowing them to keep about 20% of their own markets closed to protect fragile domestic industries. But some African countries, such as South Africa and Nigeria, argue that they are being bullied and threatened into making agreements before they are ready; the EU insists all must be wrapped up by the end of the year. The Europeans argue that the deals are designed to encourage regional integration in Africa. The Africans retort that by making separate deals with different countries they are doing exactly the opposite.

Europe's new insouciance about human rights will worry many, especially those suffering atrocities in Zimbabwe and Darfur, while the inducements hardly look tempting. Europe needs to do much better than this if it is to win the bride.

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Economist.com WORLD MIDDLE EAST & AFRICA

Nigeria's drug trade

That's all they needed

Dec 6th 2007 | LAGOS
From The Economist print edition

Illicit drugs flow in from all over and then flow out to Europe

A FAIRLY typical recent morning at Murtala Mohammed, Lagos's main airport, saw four traffickers carrying cocaine, heroin or marijuana caught, arrested and X-rayed before noon. All but one of them lived abroad, in Belgium, India and Spain. Stuck without money or just looking for more, they had agreed to swallow the stuff or slip it into their luggage. Since the beginning of the year, Nigeria's Drug Law Enforcement Agency has made 234 similar arrests at this Lagos airport. But this, according to the agency's director-general, Lanre Ipinmisho, is just grazing the surface of the country's booming drug trade.

West Africa is the newest centre for trafficking drugs into Europe. European demand for cocaine and heroin is rising fast and dealers, faced with intense scrutiny on familiar import routes, have been obliged to find new ones. Cocaine from the Andes is arriving at west Africa's ports, airports and border crossings. Heroin from Afghanistan is coming in too.

Nigeria is not the only victim of the growing trade. Guinea-Bissau, a small country emerging from civil war and a string of coups, has seen its tiny export economy overrun by illegal drugs. But as the economic hub of west Africa, Nigeria has, inevitably, also become its drug-trafficking hub. Last year 44% of the west African drug-traffickers arrested in Europe were Nigerian (compared with 3% from Guinea-Bissau). Drugs have been trickling across Nigeria's borders since the 1980s, but over the past few years the trickle has become a torrent.

Nigeria's history of fighting the scourge is not the sort to discourage dealers. Its drug agency, founded in 1990, was immediately immersed in scandal when its own top people were themselves found to be involved in trafficking. At the end of October the country's independent commission on corrupt practices called in the agency's former chairman and eight other officials for questioning over money and drugs missing from an exhibit.

Organised criminals have also got into the business. The country's anti-graft body, the Economic and Financial Crimes Commission, says it often stumbles upon drugs during money-laundering raids. The most powerful crime syndicates are involved, says Lamorde Ibrahim, the commission's director of operations in Lagos. A six-person group from his office and the drug-enforcement agency work incognito, unknown even to colleagues.

The network of gangs and dealers means that drugs are increasingly available on Nigeria's streets. At the Lagos State Rehab and Vocational Training Centre former junkies tell stories of taking to drugs while at university, or jobless, or under pressure from the city's notorious gangs of “area boys”. Enough cannabis to roll one cigarette can be found on the streets for as little as 20 naira (about 15 cents). The UN's drugs office estimates that heroin and cocaine cost slightly more, at 20 to 50 naira and 80 to 100 naira a pinch.

Reform of the drug agency may have begun to be serious. Pointing to a change, Mr Ipinmisho says that traffickers are often confused by their arrest, having been promised safe passage through the airport by junior officers, who can now no longer sneak them through. The intentions may be better, but the agency still complains of its lack of equipment and manpower.

Nigeria is the only west African country on America's list of major drug-producing and transit countries. It is concerned enough to have sent Tom Schweich, the State Department's international drugs man, to Nigeria last month. He promised to supply the latest body-cavity X-ray machines to four of Nigeria's international airports. New technology like this will be installed first at the airports and then, more slowly, at ports and land borders. Not too slowly, Nigerians hope. Their country is already notorious for corruption and financial crime; the last thing it needs is narcotics too.

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Sudan

The bear facts

Dec 6th 2007 | KHARTOUM
From The Economist print edition

Peace in the south, war in the west and poverty amid riches

AP

Bashir the great survivor

THE presidential pardon given to Gillian Gibbons, a British schoolteacher who was briefly jailed for allowing her pupils to name the class teddy-bear Muhammad, proves how mature and responsible Sudan's government is. Such is the solemn opinion of a senior Sudanese official.

Some Sudanese may join in imagining that their country emerged well from the teddy-bear affair (although a few sword-waving hotheads now blame the state for failing to defend Islam against such blasphemy). But to many in this crisis-prone country, as well as to a hissing chorus of Muslim commentators elsewhere, the business looked more like an embarrassing symptom of sickly xenophobia or, perhaps, an act of base demagoguery. In fact, both views, benign and malevolent, are probably true. As with so many other aspects of Africa's biggest and most turbulent state, it all depends on how you look at things.

The Islamist regime of General Omar al-Bashir is brutal. For 15 years it pursued a vicious *jihad* against largely non-Muslim rebels in the south, then armed and goaded tribesmen in the west to attack rival ethnic groups, generating the Darfur tragedy that has left some 300,000 people dead. Mr Bashir's inflammatory rhetoric and often mulish resistance to humanitarian pleading have made Sudan a pariah, at least in the West. His hounding of dissidents, corrupt cronyism, lack of interest in the poor and favouritism for the capital at the expense of the provinces have hardly made him popular at home, either.

Yet this same regime signed a treaty in 2005 that ended fighting with the south, Africa's longest war. It thereby committed itself to sharing power and revenue with foes who are hardly angels themselves, and to a democratic transition that could yet prove a model for the continent. Furthermore, Mr Bashir's government has retreated from the fundamentalist fervour unleashed by his 1989 coup. It is hard to imagine another Arab capital hosting Christian revivalist meetings in its biggest football stadium, as Khartoum does. Unlike some neighbouring dictatorships, Sudan's tolerates a lively press, opposition parties and the presence of thousands of foreign aid workers. It has also survived longer than any regime since Sudan gained independence in 1956.

That longevity owes much to the way that Mr Bashir has cleverly split the differences in his often-divided government. Thus, for instance, on Darfur the representatives of the more hardline intelligence and security ministries, such as Nafie Ali Nafie, have always wanted a military solution regardless of the world's sensibilities. The more moderate ministers, such as the vice-president, Ali Osman Taha, argue that ending Sudan's diplomatic isolation is more important than winning the war. The two wings are ascendant at different times, and Mr Bashir oscillates between them. It gives Mr Bashir a useful degree of ideological flexibility and keeps Western diplomats nicely off-balance as well.

Some officials readily admit to many mistakes in Darfur, and regret the carnage. They point in mitigation to such goodwill gestures as granting free admission to state universities for students from Darfur, and note that it was the rebel parties, not the government, which failed to show up for recent peace talks. Even Western diplomats plead that much of what appears to be stalling on, for example, the deployment of a UN peacekeeping force, has to do with legitimate concerns for maintaining sovereignty. But the bald fact remains that Khartoum instigated the killing and continues to obstruct the peacekeepers.

Mr Bashir's survival has also been helped by an economic boom, at least in Khartoum. The past five years have seen property prices quadruple in the capital, the number of cars double and more companies

started than in the previous 75 years. Oil revenues are pushing $4 billion a year and economic growth tops 10%. Even in the destitute south, a region virtually devoid of infrastructure, the share of oil revenues enjoyed by the Sudan People's Liberation Movement (SPLM), the former rebel group that now runs this autonomous region, is larger than the national budgets of similar-sized African nations. Yet most Sudanese beyond the capital remain dismally poor, and the country's natural potential, especially in agriculture, remains hugely under-exploited.

The obstinacy of the government over a few divisive issues presents a perpetual risk to the north-south peace accord. In October the SPLM pulled its ministers out of the national-unity government. Talks are under way to redress their grievances. But if differences linger, and the careful schedule that provides for elections in 2009 and a referendum on southern independence in 2011 begins to slip much further, Sudan could find itself sliding back into a swamp deeper even than Darfur's.

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Russia

The secret policeman's election

Dec 6th 2007 | MOSCOW
From The Economist print edition

Vladimir Putin did not rig the ballot to win control of parliament, but to assert his power over the Kremlin's warring factions

AP

NOTHING was left to chance in Russia's parliamentary election. As polling stations closed on December 2nd, large lorries with military and riot police surrounded Moscow's main squares. There was no need for them: the city was quiet and nobody was protesting. Nor was there any need for the “tourist” buses ferrying voters from far-flung regions to cast multiple ballots in one polling station after another. “We have been going around polling stations since lunch time,” grumbled one man, “and they have not paid us yet.”

President Vladimir Putin's United Russia party would have won anyway. The victory it secured, 64% of the vote, was in line with the predictions of independent opinion polls. Yet the entire machinery of the authoritarian state—including courts, prosecutors, media and security agencies—was pressed into service to maximise the turnout. It was particularly high in Chechnya and Ingushetia—the most troubled North Caucasus republics—where 99% of residents voted for United Russia. “It is an interesting result,” said Dmitry Peskov, a Kremlin spokesman, “but we have no reason to doubt it.” Many Western leaders thought otherwise. The German chancellor, Angela Merkel, said that “measured by our standards, it was neither a free, fair nor democratic election.”

By putting himself on the United Russia party list, Mr Putin turned the election into a referendum on his own popularity—odd, given that his rating is already close to 80%. So why so much nervousness and what was Mr Putin trying to prove? Plainly, he wants to retain a firm grip on power after the expiry of his second term in office (by the constitution his last stint) in three months' time. Yet the simplest way to achieve this would have been to change the constitution a year ago to allow him to stay on. Respect for the law has never been Mr Putin's strongest point.

Indeed, it is widely believed that some, including Igor Sechin, the deputy chief of staff in the Kremlin and the informal leader of the *siloviki*, the clan of former KGB men, urged him to make such a change. With little prodding, parliament would have amended the constitution and two-thirds of the country would have supported it. The West, after some grumbling, would have come to terms with it.

Deciphering Mr Putin's real motives is a murky business, as much a matter of psychoanalysis as of political interpretation. It is possible that until recently Mr Putin genuinely wanted to leave the Kremlin and become an international figure bathing in luxury and respect. Staying on might have turned him into a hostage to those seeking to protect their financial interests. As one Yeltsin-era oligarch put it: “You

stay for the third term—you may never leave."

If so, why the change of heart? The answer almost certainly lies in the ever more vicious—and open—rivalry among the Kremlin's political clans. Perhaps Mr Putin upset so many rich and powerful people that the prospect of losing control over the transition of power may simply have been too dangerous for his inner circle, and for himself. For all his talk about foreign threats and domestic enemies, what Mr Putin really fears is his entourage and a war among the clans. Winston Churchill once described the Kremlin's political tussles as being like a fight among bulldogs under a carpet: outsiders hear plenty of growling but have few clues about the victor's identity until it emerges.

Consider the latest strange noises from beneath the carpet. Two months before the election, a fight broke out among Mr Putin's men, resulting in the arrest of a general from a drugs-fighting agency accused of tapping the phones of the Federal Security Service (FSB). The arrest prompted an article from the general's boss, Viktor Cherkesov, one of Mr Putin's close allies, warning of the fatal danger of a feud within the security agencies, "a war in which there can be no winners".

A few weeks later, the deputy finance minister, Sergei Storchak, was arrested on embezzlement charges. Kremlinologists are confident that the arrest was aimed at Alexei Kudrin, the liberal finance minister, recently elevated by Mr Putin. Mr Kudrin's plea to see his deputy and let him out on bail was ignored.

Then, just two days before the election, a page-long interview was published in a mainstream business newspaper, *Kommersant*. In it, a fund manager, Oleg Shvartsman, claimed that his $3.2 billion fund was "closely connected" to the Kremlin's administration and security services. He talked of a "velvet reprivatisation" which involved "voluntary-coercive" methods. He told *Kommersant* he reported indirectly to Mr Sechin, who also chairs the Rosneft oil company. Mr Shvartsman later said his words had been distorted, but the newspaper stands by its story.

Some say the candid interview was aimed at Mr Sechin; others suggest it was his own warning "salvo". Either way, it was serious enough for the European Bank for Reconstruction and Development to pull out of creating a Russian venture-capital fund with Mr Shvartsman. Anatoly Chubais, the powerful head of the electricity monopoly, said that "intentionally or not, Mr Shvartsman told the truth".

Caught in his own system, Mr Putin seems to have decided he could not rely on any of the factions. All he could do, says Lilia Shevtsova, senior associate at the Carnegie Moscow Centre, was to appeal directly to the nation. This is why he turned the parliamentary election into a display of his own power. It is not the Russian people, or the outside world, who needed convincing of his strength, but his own elites. Whether they heed Mr Putin will become clear in the next few weeks, when he names his chosen successor.

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Pay in Germany

How low can you go?

Dec 6th 2007 | HANOVER
From The Economist print edition

Almost alone among Europe's big economies, Germany has no minimum wage. Things are starting to change

Get article background

WENDELIN WIEDEKING, Porsche's chief executive, earned an estimated €60m ($88m) this year. Hairdressers in some parts of Germany make less than €3 an hour. The gulf between them has been filled with a deafening outcry. Chancellor Angela Merkel, who is positioning her Christian Democratic Union (CDU) as the party of the political centre, has now joined in: her denunciation of the corporate "wage spiral" got the biggest applause during a speech to the party's convention in Hanover on December 3rd, held under the slogan of *Die Mitte* (The Centre).

AFP

Work makes you poor

But it is pay at the bottom end that politicians are seeking to change. On November 29th Ms Merkel surrendered to demands by the Social Democrats, the CDU's junior partner in the "grand coalition" government, for a minimum wage for postal workers. There is talk of extending that to ten other low-wage industries, including landscaping and meat-processing. Germany, one of the few rich countries without a minimum wage, may be undergoing a slow-motion revolution.

Liberal Britain and 19 other members of the European Union have economy-wide minimum wages. Most of the rest have collectively negotiated contracts broad enough to provide, de facto, a floor for salaries. Germany prides itself on letting unions and employers hammer out contracts without interference from the government. But such "wage autonomy" is under pressure. Industry-wide contracts cover fewer workers, real wages have slipped and fear of "wage dumping" by competitors from China and eastern Europe haunts German workers. The answer, say unions that represent low-paid service workers and their Social Democratic allies, is to impose minimum wages, ideally across the economy, with higher minimums for specific sectors such as postal services. The CDU, which hopes to re-elect three state governors next year, and Ms Merkel as chancellor in 2009, dares not resist too strenuously. It says yes to sector-specific floors, but no to a statutory minimum wage.

Many German economists find it scandalous that full-time workers can still be poor. Minimum wages, they argue, can save money on welfare spending. In their absence, recent pay awards have been lower in Germany than elsewhere, says Peter Bofinger, a member of the government's committee of economic wise men. The idea that Germany's labour markets are too rigid to cope with minimum wages is "nonsense", he says, given that Germany is creating many temporary jobs.

To critics, however, minimum wages are a blunt tool for fighting poverty; they stifle competition and

could destroy jobs. “A minimum wage, especially if it's too high, would be very damaging,” says Patrick Adenauer, who heads an association of family-run companies.

The early response to the postal minimum wage has increased such fears. The employers' association, dominated by Deutsche Post, a former state monopoly, in September signed a contract with ver.di, the main service-sector union, mandating wages of €9.80 an hour in western Germany and €9 in the east. The agreement extends to firms that plan to deliver letters when the postal service is opened to competition on January 1st.

But on December 3rd Dutch-owned TNT Post and Hermes of Hamburg froze plans to start a delivery service for private and small-business customers. Moreover, PIN, which belongs to the publisher Axel Springer, said it would dismiss 1,000 workers. Only the ex-monopolists at Deutsche Post can be pleased, which many suspect was the point of the wage agreement.

German unions are demanding a minimum wage of €7.50 an hour, about €1,250 per month. This is lower than in France but higher than in Austria (see chart). But, according to a study by two economists, Joachim Ragnitz and Marcel Thum, such a wage imposed across the economy would wipe out 1.1m low-wage jobs—3% of employment in western Germany and more than 6% in the east, where productivity is lower.

A minimum wage in the construction sector that has been in effect since 1997 has had little effect on employment in western Germany but has destroyed jobs in the east, according to a paper published by the research institute of the Federal Labour Agency. Along with easterners, it says, the young are especially vulnerable.

If reducing poverty is what the politicians are seeking, minimum wages are not the answer. Less than a fifth of workers with low wages live in poor households. The welfare system is supposed to provide every German who needs it with enough income to get by. Even though it might boost the incomes of some working poor, a minimum wage might also throw others out of jobs, making them poorer.

The move to minimum wages is part of a piecemeal retreat from the Agenda 2010 reforms which the Social Democrats enacted in 2003 and 2005, when they led the government and about which they have had misgivings ever since. The idea was to push unemployed people who had few skills into jobs by cutting the benefits available to the unemployed along with giving them an incentive to work.

“Dropping wages was part of the strategy to create more employment,” notes Holger Schäfer of the Cologne Institute for Economic Research. More than 1m Germans are reckoned to supplement their welfare benefits with (mostly) part-time jobs. Last month the number of unemployed Germans dropped to 3.4m, the lowest figure for 14 years.

Is that success now at risk? Not if a low minimum wage is set by experts rather than by politicians, perhaps with an even lower rate for young workers, as in Britain. The danger, though, is that Germany will instead succumb to pressure for ever-higher wage floors for individual sectors, leading to a workers' wage spiral that will be more damaging, if more popular, than the pay rises of fat cats. In their quest for votes, Germany's leaders are courting economic danger. It was ever thus.

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Race and politics in France

Trouble in the court of Sarkozy

Dec 6th 2007 | PARIS
From The Economist print edition

The most prominent Muslim minister causes a stir at home and abroad

SHE was dressed in Dior for the dinner in honour of Nicolas Sarkozy at the White House, and seated at the king's table for the one in Morocco. She was in China with the French president last week, and at his side again this week for a state visit to Algeria. No other minister seems to follow the globe-trotting Mr Sarkozy as much as Rachida Dati, his justice minister, and none is so scrutinised by the French media.

The first Muslim to hold such a top government job, and a woman to boot, Ms Dati has become emblematic of an effort to open up the French elite. This makes her controversial judicial reform a test of the new France in more ways than one.

Eyevine

The minister for justice, and foreign travel

Ms Dati's backstory, as recounted in her recent book, “Je Vous Fais Juges” (“You be the Judge”), reads more like that of Barack Obama than the typical French minister. One of 12 children raised in a council flat by an illiterate Algerian mother and a Moroccan stonemason, she rose and qualified as a magistrate through a mix of tenacity, pushiness and hard work, including night shifts as a nursing auxiliary.

She was adopted by Mr Sarkozy when he was interior minister (she had written to him cold, and demanded a meeting) and has worked in his team ever since. Since she was appointed rather than elected, Mr Sarkozy's centre-right party is seeking to boost her standing by putting her top of the list for the next municipal elections in the bourgeois 7th arrondissement of Paris. Ms Dati's ascent prompts as much admiration as it does resentment. Her appointment did not prevent another eruption of street violence in the heavily Muslim *banlieues* last month. In the same week that rioters torched cars, the country's justices also took to the streets during a strike to protest against her plans to amalgamate courts. Robert Badinter, a Socialist senator and former justice minister, said he had never seen “such anxiety and bitterness” from magistrates.

Unpopular as it may be, the reform makes sense. The geography of the French court system has not changed in nearly half a century, despite huge population shifts. In largely rural areas, there is a *tribunal de grande instance* (county court) for fewer than 150,000 people; in big cities, one such court serves over 550,000. In Lorraine in eastern France, ten magistrates' courts employ a full-time judge without the workload to justify it, and two have none at all. By contrast, some city courts have vast backlogs. Ms Dati plans to close 178 of the 473 magistrates' courts, and 23 county courts, and redistribute staff.

Mr Sarkozy has made clear his desire to shake up the court system to speed up decisions, improve access and end the isolation of some investigating judges. An inquiry into one of France's most egregious recent miscarriages of justice—the imprisonment of 13 people wrongfully accused of running a paedophile ring in Outreau—said one cause was the fact that the investigating judge was working entirely alone.

Naturally, magistrates affected by closures are enraged. Members of parliament, even those from Mr Sarkozy's party, have been fiercely critical of Ms Dati's plans too, accusing her of striking courts off the map without consultation. There also seems to be genuine concern about Ms Dati's management style. In her short time in office, more than half a dozen members of her staff have quit.

The trouble for critics is that questions about Ms Dati's competence collide with France's awkward new political correctness. Charges of racism are already in the air. Dominique Sopo, head of SOS Racisme, an

anti-discrimination group, says hostility to her reform is because she is “young, a woman, and of North African origin. Unfortunately, this profile creates resentment among a French elite made up of white men over 55.”

Still, other female members of the government too are said to have been put out by Ms Dati's prominence, not least the Senegalese-born Rama Yade, junior foreign minister for human rights, who was excluded from Mr Sarkozy's trip to China.

Mr Sarkozy has stood solidly by Ms Dati throughout. Having publicly admired the ethnic diversity of the Bush administration in America, Mr Sarkozy is commendably keen to reproduce it in France. Indeed, given her iconic value, he cannot afford to let her fail.

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The Mafia in Italy

A declining family business

Dec 6th 2007 | ROME
From The Economist print edition

The godfathers are under pressure from police and businessmen alike

BEFORE flinging himself out of the window when surrounded by police, Daniele Emmanuello, the Mafia "godfather" of Gela, a port in Sicily, managed only to pull some clothes over his pyjamas. Or so it seemed. He was shot dead as he fled on December 3rd, and during the autopsy pathologists discovered that Mr Emmanuello had done something else in his final moments: he had swallowed a small plastic bag containing tiny coded notes.

Similar notes were found last year in the hideout of Bernardo Provenzano, *capo di tutti i capi* of the Sicilian Cosa Nostra, and on Salvatore Lo Piccolo, his would-be successor who was arrested last month. This wealth of evidence is perilous to the Mafia. Once deciphered, it leads investigators not only to associates but also to businessmen who pay protection money.

Sicily's entrepreneurs pay Cosa Nostra an estimated €8 billion ($12 billion) a year. Now that the Mafia is less involved in international drug-smuggling, extortion has become its main source of revenue. As a result, it appears to be more vulnerable to the combined pressure of the government and of businessmen who refuse to pay.

The day after killing Mr Emmanuello, police arrested dozens of Mafia suspects and seized the *libro mastro*, or central register, of all the firms paying money to a rising clan in the eastern city of Catania. Last month a similar document was taken from Mr Lo Piccolo, which has led the police to question, among others, the head of the Palermo doctors' guild (who denies it pays the Mafia).

At the same time a small but growing band of mainly young businessmen is defying the mob. The improbable centre of the revolt is Caltanissetta, a town in traditionally backward central Sicily. Last month mobsters showed how seriously they take the rebellion when they torched the local offices of Italy's employers' federation, Confindustria, which has enthusiastically supported the revolt. Menacingly, they also stole computer discs listing the businessmen involved.

The revolt against the *pizzo*—slang for a protection payment—has spread to the southern city of Agrigento and, after the death of Mr Emmanuello, could extend to Gela. More important are the first signs of defiance in Cosa Nostra's home town of Palermo. On November 16th three men, including the son of a noted clan boss, were sentenced to between ten and 16 years in prison for extortion. They had been reported by a well-known restaurateur. Less than a week earlier the city got its first anti-racketeering association.

At least two factors underlie this change. One is the power vacuum in Cosa Nostra caused by Mr Lo Piccolo's arrest. Another, more surprising, is the spread of liberal economic views in a society hitherto used to doing business through cartels and political patronage. Giving his reasons for standing up to the Mafia, Enrico Colaianni, head of Palermo's new business resistance movement, told Milan's big newspaper, *Corriere della Sera*, last month: "Racketeering rigs the market, and if you pay you agree to be part of a system that rejects...free competition."

Giuseppe Pace, the leader of Sicily's chambers of commerce, has rightly called it "an extraordinary moment". But he and other entrepreneurs cannot defeat Cosa Nostra alone. They need political support. Last month parliament slipped a clause into the 2008 budget providing tax breaks to businessmen and women who refuse demands for protection money. But more is needed. A well-publicised visit by the prime minister, Romano Prodi, to gladhand rebel businessmen would help persuade the doubters that standing up to the mob is more than just brave eccentricity.

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Bosnia and Kosovo

The game of the name

Dec 6th 2007 | BRUSSELS
From The Economist print edition

Balkan diplomacy at NATO and the EU

WESTERN institutions may look frayed and indecisive to their own members, but to those wanting to join them they can seem mighty effective. Just look at the impact of the European Union (EU) on Bosnia. Since April 2006 the fragile state stitched together by outside powers more than a decade ago has seemed to be accelerating towards disaster. Amid media reports of disintegration and renewed conflict, gloomy Bosnians began stockpiling oil and sugar. Not any more.

On December 4th, the EU initialled a stabilisation and association agreement with Bosnia after setting aside a row over police reform. This first step on the long road to EU membership was the cause of general rejoicing. “The mood has changed completely, people are much more optimistic,” says Osman Topcagic, the Bosnian official in charge of EU integration.

The turnaround has been swift. On October 19th Miroslav Lajcak, the tough-minded Slovak who serves as the outside world's governor-general in Bosnia, said that unless politicians changed the rules to stop government members boycotting meetings, he would impose the change anyway.

That nonplussed Bosnia's Serbs, masters of the no-show tactic, who have been stroppily hinting they might seek independence on the same lines as nearby Kosovo. That mainly Albanian province is preparing to declare independence from Serbia next year, after negotiations on its future are formally declared dead next week.

Given the nervousness across the region—Russia opposes independence but much of the West supports it—one would have hoped that NATO could also pour some soothing balm. Kosovo's southern neighbours, Albania and Macedonia (which has a large Albanian minority), are strong candidates to gain invitations to join the alliance at its Bucharest summit in April. But Greek objections to its northern neighbour's “monopoly” of the Macedonian name, which is shared by a large chunk of northern Greece, must be met first.

Greece says it wants a final resolution of the dispute that has lain dormant for years, or it will veto the NATO invitation. The fact that Macedonia plans to introduce new licence plates emblazoned with “Macedonia” has not helped. Greece has suggested its neighbour call itself something like “New Macedonia”. The government in Skopje offers to join as the Former Yugoslav Republic of Macedonia (FYROM), a mouthful it uses in some international forums.

Not enough, says the Greek foreign minister, Dora Bakoyiannis, “FYROM is not a serious name”. Quite so. But stirring the warm coals of the Balkans is hardly serious either.

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Charlemagne

A Balkan fable

Dec 6th 2007
From The Economist print edition

Slovenia tries its hand at writing a happy ending for the former Yugoslavia

Illustration by Peter Schrank

ON PAPER, it has the happy symmetry of a morality tale. In less than a month, the rotating presidency of the European Union will pass to Slovenia, the first chunk of Yugoslavia to gain independence 16 years ago. And as the Slovenes take their turn chairing the EU's summits and ministerial councils, their biggest job will be to oversee what could be the last chapter of Yugoslavia's break-up. Some time between January and the spring, the predominantly Albanian province of Kosovo will declare itself independent of Serbia, against the wishes of Russia, Serbia's ally, but with the blessing of America and much of the EU.

In a children's fable European unity, under strain over Kosovo, would be rescued by Slovenia, the plucky newcomer. As the first ex-communist state to hold an EU presidency, and the only bit of the former Yugoslavia to join the 27-nation club, it would use its standing to remind the union of the awful costs of its disunity in prolonging the Yugoslav civil wars of the 1990s.

European diplomacy, of course, is not built on happy fables. A European foreign minister admits he would be “much happier” if the Kosovo crisis were not falling on Slovenia's watch. At best, he says, this nation of 2m people can hope to offer a “co-ordinating presidency” when it takes over on January 1st, keeping the seat warm in between the turns of two giants of the EU, Germany (EU president for the first half of 2007), and France (which takes over from Slovenia in July 2008). Slovenia must not be “too creative”, says the foreign minister. He even questions its moral right to demand that neighbours like Serbia face up to their history; Slovenia is in a “precarious position” because it has “not admitted all the wrongs” from its communist past, allowing ex-apparatchiks to remain in positions of power after 1991.

This litany of Slovene shortcomings would be bleak but for one detail: the foreign minister in question is Dimitrij Rupel of Slovenia. Speaking at his country's spiffy new EU summit site (a modernist box of glass and wood in the grounds of a castle outside Ljubljana), Mr Rupel's candour suggests his country's presidency might, at the least, be rather interesting. In Brussels and national capitals, opinion is divided as to whether it is bad or good for Slovenia to be in the chair for the Kosovo crisis.

First the bad. Slovenia, more than many other EU countries, would like to avoid making painful choices between Kosovo and Serbia. The official EU position is that Serbia cannot be fully embraced until it hands over indicted war crimes suspects, notably the former military commander, General Ratko Mladic. But for many Slovenes, things are not quite so clear-cut. Slovene businessmen “like to do business with Serbia”, Mr Rupel admits. It is a valuable market, and there are ties of language and “nostalgia” between the two

countries.

To some, any hint of equivocation from Slovenia risks triggering the default reflex of EU governments: to dodge tough decisions. “If the Slovenes come over all ambivalent and wring their hands, then others will say, well yes, that is how we feel too,” says an official. The risk of another Balkans fudge is clear.

There is a strong EU consensus that European “rule of law” missions, involving police, judicial and political advisers backed by substantial aid, must be sent to Kosovo to replace the United Nations mission shortly after (doomed) Kosovar-Serb compromise talks end on December 10th. But a clutch of EU nations does not want to recognise Kosovo as a new state. The holdouts include Slovakia and Romania, who say they fear that a breakaway state will embolden their own national minorities. Cyprus argues—with Greek backing—that Turkish-Cypriots in the north of the divided island may exploit Kosovo as a precedent. A temptation in the EU is to deploy its missions without taking a final decision on Kosovo's legal status. But that risks leaving the new state in a prolonged and unstable limbo.

Some say that Slovenia is “irrelevant” in such a major row, which involves Russia, America and the UN Security Council. True, little Slovenia has so few embassies that in 110 countries its EU presidency will be represented by French diplomats. To quote a scornful European official, the Slovenes may be chairing EU meetings next year, but it is hardly going to be their president who “convinces Putin” to change his mind about Kosovo.

Then comes the good. Slovenia brings to the EU unique knowledge of the region (though some in the Balkans find Slovenes snobbish). In the words of a diplomat, when Slovenes and Serb officials meet, the Slovenes “know when the bullshitting has started”. That is a skill that should not be underestimated.

The moral of the story

If Kosovo and indeed the region are going to make it, Serbia will have to be brought around one day. Mr Rupel is something of an economic determinist on this front. Seen from Slovenia, the main barrier to progress in the western Balkans is Serbia's underperformance. He quotes some striking figures: since 1989 Slovenia's annual GDP per person has risen from $5,000 to $34,000 at purchasing power parity; by contrast, Serbia's GDP per person has remained static at around $3,000 per person (though Serbian statistics are more upbeat). “They have not moved anywhere. This is untenable,” says Mr Rupel.

Slovenia has an advantage of credibility. It is telling the truth when it says it wants Kosovo and Serbia to join the EU (in contrast with the hypocritical posturing of some older EU members, which endorse Balkan accession to the EU but fear selling such enlargement to voters). It is, after all, in Slovenia's interest to have wealthy, law-abiding EU neighbours.

On its own, Slovenia is not going to resolve the Kosovo crisis. But the symbolism of its presidency is important, and well-timed. The visible asymmetry of Slovenia's success is a powerful rebuke to Serb and Kosovar positions entrenched round nationalism and ethnic isolation. If that moral sinks in, even a bit, it might just help the Yugoslav story to a happier ending.

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Economic outlook

In the bleak midwinter

Dec 6th 2007
From The Economist print edition

The economy is on the brink of a painful tumble, which is why interest rates have been cut

Illustration by David Simonds

THE Bank of England rarely moves interest rates in December. Until this week it had done so only once since being handed operational control over monetary policy ten years ago. That was in 1998, when it slashed rates by half a percentage point on fears of a sharp setback to the global economy. But on December 6th, under Mervyn King, its governor, the central bank broke with habit and brought down the base rate by a quarter-point, from 5.75% to 5.5%.

A few days earlier, the City had been expecting the monetary-policy committee (MPC) to do nothing this time around. When Reuters polled 56 economists at the end of November, just 15 predicted a reduction. The central bank had signalled in its November *Inflation Report* that the base rate would come down to 5.25% next year. But the rate-setters faced an especially difficult dilemma this month.

On the one hand, the credit crunch resulting from the worldwide financial turmoil of the past few months seems bound to brake the economy next year. Fears are mounting that America may slide into recession, which would exacerbate the potential losses on dodgy mortgage loans that provoked the banking crisis in the first place. Furthermore, the British economy has historically tended to move in line with America's.

On the other hand, the rise in world oil prices since August, combined with higher food prices, is likely to push up inflation over the next few months. The risk is that another bout of higher inflation, not long after one earlier this year, might get baked into expectations, leading to an upward spiral of prices and wages. That would make it harder for the central bank to lower interest rates later in order to counter economic weakness.

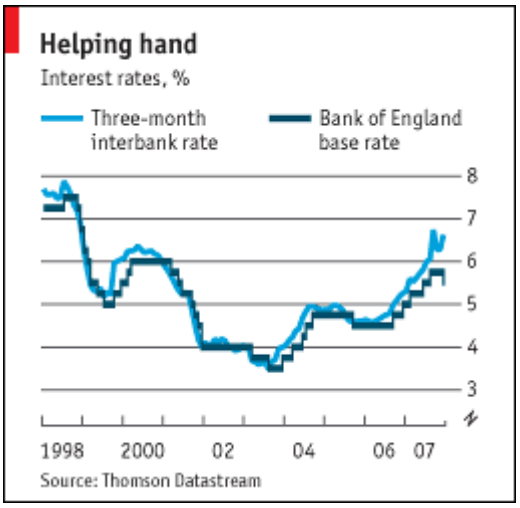
Two of the nine members of the MPC had already resolved the dilemma in November by voting for a rate cut. Significantly, they included Sir John Gieve, one of two deputy governors, who is charged with overseeing financial stability. What may well have swayed at least three other MPC members to join them this week were two late-breaking pieces of evidence about the risk of an abrupt slowdown.

On December 5th, the day before the MPC's decision, a keenly watched survey of the big services sector reported an unexpectedly sharp slowdown in business activity, which weakened in November to its lowest level since May 2003. Arguably, the CIPS survey highlighted the central bank's dilemma, since it also

showed a pick-up in price pressures. But it came on the same day that the housing market became enveloped in yet more gloom.

House prices fell by 1.1% in November, according to the Halifax index compiled by HBOS, a bank. It was the third month running that prices had slipped. The fall of 2.4% since August was “the greatest in any three-month period since the dark days of 1992”, points out Michael Saunders, an economist at Citigroup, another bank. The Halifax report came only a few days after the Bank of England's own figures had shown a sharp fall in the number of loans approved for house purchase in October.

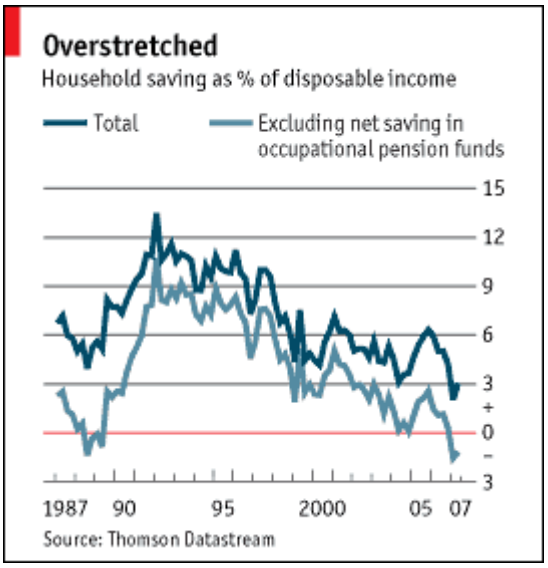
Adding to the worries, the Financial Services Authority, which regulates banks, issued a severe-weather warning about the mortgage market. Clive Briault, the FSA's managing director for retail financial business, told a conference of mortgage lenders on December 4th that there was “the very real prospect that conditions will worsen further into next year, in terms of both liquidity and credit risks”. For the 1.4m borrowers whose short-term fixed-rate loans taken out in more clement times were due to end in 2008, higher refinancing costs might “prove too much for many of them to afford”.



The clearest signs of continuing liquidity stresses have been in the money markets, where banks lend to each other. The three-month interbank rate is normally a bit higher than the base rate. At the height of the financial crisis in September, it rose to 6.9%, more than a percentage point above the central bank's 5.75%. There was relief when it subsequently fell to a bit below 6.3% in October and early November. But more recently it has gone up again, to 6.6% (see chart).

Since this three-month rate is an important benchmark for much lending, especially to companies, monetary conditions have tightened since the MPC's November meeting. This in turn is likely to make firms trim investments they were planning. But the biggest threat to growth will probably come from a slowdown in consumer spending, the mainstay of the sustained economic expansion of the past decade.

The resilience of household spending over the past year despite slower growth in real disposable incomes has had much to do with conditions in the housing market. Rising house prices have emboldened consumers to save much less than usual. The saving ratio has slipped to 3.1% of disposable income, at the latest count. The underlying position is even worse, since the measure includes saving through pension plans, which has been boosted recently by higher employer contributions to cut pension-scheme deficits. If this is stripped out, the saving ratio turned negative this year—ie, people spent more than they earned (see chart).



The danger is that a downturn in the housing market will prompt a snap-back in the saving ratio as consumers borrow and spend less. The sharper the downturn, the more spending will slacken. In 2005, when house prices stalled for several months, consumption growth slowed to 1.5% and the economy grew by only 1.8%. If house prices fall next year, the collateral damage is likely to be considerably greater.

This week's decision by the Bank of England will do something to restore confidence. But the very fact that it has cut the base rate earlier than expected tells a story in itself. Next year looks increasingly likely to see the most serious setback to growth in Britain for over a decade.

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Military spending

Tarnished glories

Dec 6th 2007
From The Economist print edition

Worries about underfunding are becoming impossible to ignore

THE largest single loss of life experienced by the British army since the Falklands war had nothing to do with enemy action. When an elderly RAF “Nimrod” aircraft burst into flames and crashed near Kandahar in Afghanistan on September 2nd 2006, killing all 14 of its crew, it was immediately clear that it was an accident. On December 4th the Ministry of Defence (MoD) published its inquiry into the disaster, which laid the blame on a fuel leak.

The parliamentary apology by Des Browne, the defence secretary, came after nearly a year of strained relations between the armed forces and their political masters. In January Gordon Brown, then the chancellor, promised extra cash when soldiers complained about filthy housing. A steady drumbeat of complaints over outdated kit (the Nimrod, for example, dates from 1969), low morale and an indifferent civilian population peaked in November, when a leaked report by General Sir Richard Dannatt, the chief of the army, described troops as feeling “devalued, angry and suffering from Iraq fatigue”. Just days later Mr Brown, by then prime minister, was ambushed by five ex-service chiefs, who complained in the House of Lords that his government was treating its soldiers with “contempt”.

At the root of the complaints is money, or the lack of it. To a casual observer, a cash shortage is not immediately obvious. The MoD has plenty of high-tech projects in the pipeline, including two big aircraft carriers (and new jets to put on them), more state-of-the-art nuclear submarines, dozens more Eurofighter jets for the air force and a new family of armoured vehicles for the army. MoD documents talk proudly of expeditionary warfare and of an army that can do everything from peacekeeping to fighting a full-scale regional war.

But these grand plans have not been matched by grand spending. The MoD's core budget has grown only slowly, at roughly 1% a year in real terms since 2000. Britain spends about £30 billion a year ($60 billion) on its armed forces. Mr Browne—derided by his critics as Britain's first part-time defence secretary, since he combines the job with that of Scottish secretary—claims that Labour has overseen the longest rise in defence spending since the 1980s. But it amounts to just 2.3% of GDP, below the world average and far behind America, which devotes 4% of national output to its armed forces.

The result is delays and uncertainty over new gear (the future of the navy's surface fleet is uncertain, and the new armoured vehicles are years behind schedule) and the sweating of existing assets. The RAF Nimrods were due to be upgraded four years ago, but the money could not be found. Troops are flown to trouble spots on Tri-Star jets built in the 1970s, and they have had to deal with shortages of everything from body armour to helicopters when they get there.

The future holds little hope of relief. Although Mr Brown has hinted at withdrawing all British troops from Iraq in 2008, the fighting in Afghanistan, where far more of them are deployed, remains fierce. Waging two wars on a peacetime budget is rapidly wearing out vehicles and equipment. Fixing or replacing them will cost more money than is likely to be available. Service chiefs are already battling over how to close a projected £1 billion hole in planned equipment spending. Expect more barrack-room rumblings.

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Political donations

Not so darling Wendy

Dec 6th 2007 | EDINBURGH
From The Economist print edition

The sleaze spreads north

FOR Gordon Brown, the party-funding scandal which has already claimed the job of the Labour Party's general secretary, Peter Watt, and threatens senior figures in the government shows no sign of going away. It has instead spread north to his native Scotland, where Wendy Alexander, Labour's leader in the devolved Parliament, is fighting to save her career.

The sum involved in Ms Alexander's case (£950, or $1,960) is comically small next to the more than £660,000 given to the Labour Party by David Abrahams, a Newcastle businessman, through intermediaries. Yet Ms Alexander, seen but recently as the Scottish Labour Party's shining hope, boobed tremendously. To finance her leadership campaign (which, since she was the only candidate, was not a costly affair) she raised £16,000, including £950 from Paul Green. A property developer who lives in the Channel Islands, Mr Green cannot vote in British elections, so accepting his cash was against the law.

Ms Alexander maintains that she was led to believe the money came from a Glasgow company controlled by Mr Green. But the company denies any knowledge of the donation. Mr Green insists it was a personal contribution, even brandishing a letter of thanks from Ms Alexander sent to his Jersey home. One head has already rolled: Charlie Gordon, a Labour Member of the Scottish Parliament (MSP) from Glasgow, who solicited Mr Green's donation, has resigned as the party's transport spokesman. But this has failed to pacify those such as Sir Alistair Graham, a former chairman of Westminster's Committee on Standards in Public Life, who believe that Ms Alexander should consider her position, too.

Many wonder whether Ms Alexander, who claims that a pile of evidence sent to the Electoral Commission will clear her, is under orders from Mr Brown to stand firm. Resigning would, after all, increase pressure on Harriet Harman, the Labour deputy leader, who accepted money from Mr Abrahams's intermediary during her campaign for that post, and on Peter Hain, the work and pensions secretary, who failed to declare a £5,000 donation during the same race. It would also have some importance for Mr Brown himself. Ms Alexander is his protégée; her brother, Douglas Alexander, is his international-development secretary and one of his closest advisers.

The prime minister may also want Ms Alexander to remain because he trusts no one else to revive Scottish Labour's bleak fortunes. Up against a Scottish National Party (SNP) that echoes Scottish public opinion in urging stronger devolved government, on November 30th she proposed a constitutional commission to examine the case for more powers. With Mr Brown's approval, she argued that it should consider more tax-raising powers and a new funding settlement for the United Kingdom's four constituent nations.

Conservatives and Liberal Democrats like the idea, seeing it as a unionist counter-thrust against the Nationalists' ambitions for full-blown independence. The hardest sell is to Scottish Labour itself, which is suspicious of anything that looks like doing the SNP's job for them. “Is there anyone else with the clout with Gordon Brown to see this through?” wonders one Tory MSP. “I don't think so.”

So more than Ms Alexander's fate rests on whether the Electoral Commission concludes that she took “reasonable steps” to check that the £950 donation was legal, and therefore did not “knowingly” accept an illegal gift. If it does not, she is likely to go the same way as Mr Watt and Mr Gordon. That would make life even tougher for the beleaguered Mr Brown.

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The “lyrical terrorist”

Be careful what you Google

Dec 6th 2007
From The Economist print edition

Another young Muslim is punished for downloading extremist material

THOSE who fall foul of the law because of their internet-surfing habits are often assumed to be sheepish-looking middle-aged men. On December 6th a different sort of criminal was in the dock for downloading illicit material. Samina Malik, a slight 23-year-old in a headscarf, last month became the first Muslim woman to be convicted of a terrorism offence in Britain when she was found guilty of collecting a library of jihadist manuals from the internet. This week Miss Malik, who worked at an airport bookstore and called herself the “lyrical terrorist” in online forums, was given a suspended nine-month prison sentence and community service.

She is not the first person to be punished for flirting with terrorism on the web. In July three British men were jailed for terms from seven to ten years for using the internet to incite others to wage holy war. In the same month four Bradford students and an Essex schoolboy were collectively sentenced to just over 13 years for having a treasure-trove of jihadist texts and videos, which a court determined they planned to use for terrorist purposes.

The “lyrical terrorist” has attracted attention mainly because of her bloodthirsty poetry. “*Kafirs* your time will come soon/And no-one will save you from your doom!” went one effort. Another was called “How to Behead”. But Miss Malik was convicted not for these offerings (which she says were inspired by popular American rap music) but for downloading documents from the web. Police discovered “The Al Qaeda Manual” and “The Mujahideen Poisons Handbook”, among other titles.

Miss Malik's trial judge admitted that he had found her “a complete enigma”. It is hard to know what to do with people who are clearly drawn to terrorism but are not actually plotting. Wallowing in jihadist nonsense online harms no one in itself, but it may well have devastating consequences if it leads to action.

Miss Malik was cleared of breaching section 57 of the Terrorism Act, which bans possessing any article “for terrorist purposes”. She was found guilty instead under section 58, which outlaws possessing documents “likely to be useful to a person committing or preparing an act of terrorism”—even if there is no proof that the defendant is planning such an act himself. In October a 17-year-old was convicted under the same clause when he was caught with bomb-making instructions under his bed.

On December 6th the government proposed plans to increase the maximum time suspected terrorists may be held before being charged, from 28 days to 42, in special circumstances. The point at which terrorist sympathies pose a specific enough threat to merit imprisonment may be as hard to ascertain as the proper limit of that controversial power.

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Prison expansion

Shoulder to shoulder

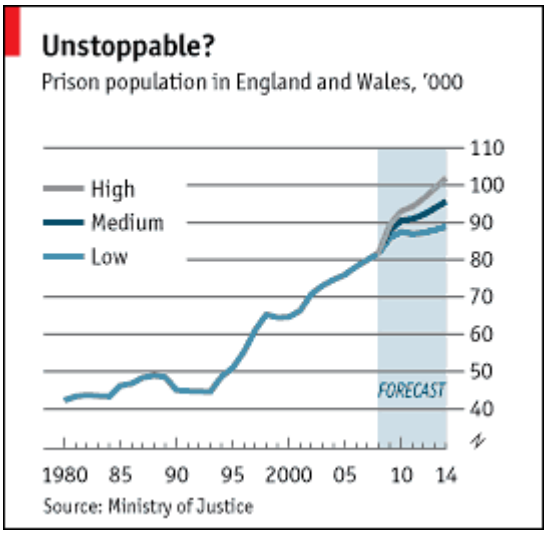
Dec 6th 2007
From The Economist print edition

Britain's penal system is looking less European and more American

IN THE sunny early days of Gordon Brown's premiership, it seemed for a while that a radical change in penal policy was on the horizon. “We cannot carry on building prisons indefinitely and we need to look at new approaches,” Lord Falconer, then the justice minister, had said in May. Two months later his successor, Jack Straw, called for a “national conversation” about the use of custody. The prison system, one of the few public services not yet thoroughly overhauled by Labour, looked like a place for Mr Brown to leave his mark.

That now seems unlikely. On December 5th Mr Straw announced plans to build yet more prisons, as recommended in a report that day by Lord Carter, a favourite government problem-solver (and once the best man at Mr Straw's wedding). With their 81,000 jail places full up, England and Wales already lock away more of their population than any western European country bar Luxembourg. At a cost of £2.7 billion, Mr Straw now plans to add 15,000 more places by 2014.

No big new jails will be ready until 2010, so until then the government will have to rely on quick fixes such as converting an old army base and buying a prison ship (embarrassingly, it sold one only last year). Once ready, the “Titans”, as the big new jails have been christened, will hold 2,500 inmates each, making them twice the size of Britain's largest existing prisons. A shame, argues Gavin Lockhart of Policy Exchange, a think-tank: more small, local jails would have kept convicts near their families, helping their rehabilitation. Economies of scale seem to have won the day.



Even the Titans will only just keep pace with the demand for places (see chart). If official estimates are right, by 2014 the number of people locked up will have doubled in 20 years. To outsiders this suggests a country riddled with crime. Yet crime has broadly been falling. One of Labour's proudest boasts is that crime has dipped by a third since it came to power in 1997 (critics counter that serious offences have become more common).

Prisoner numbers have risen partly because the police are bringing more offenders to justice. But the big increase is due to changes in sentencing: many petty criminals who once would have been fined are now jailed, and serious offenders' sentences are 20% longer than they were in 1995. New crime laws have increased the penalties for the worst offences, causing sentence inflation across the board.

Putting a lid on the prison population will mean restraining sentences. Lord Carter suggested a way of doing this, too: an independent commission that would set sentencing guidelines according to prison capacity. At the moment, guidelines are determined by a hotch-potch of statute and precedent; the government simply has to build however many prisons are required as a result. Under the Carter plan, the boot would be on the other foot: sentencing would have to take into account the limitations on capacity. So ramping up jail terms for violent criminals might only be possible if more shoplifters were sentenced to community service, for example.

Setting sentences according to capacity, rather than vice-versa, could be hard to sell to voters, who reflexively believe that crime is getting worse and that longer sentences are the answer. The government has set up a “working party” to look into the proposal, which may spell doom. That would be a wasted chance, says Rob Allen of King's College, London. Factoring in the consequences of sentencing is sensible as well as humane: “We are making an astonishing investment in something of limited social benefit.

Prison is an expensive resource that ought to be used sparingly.”

Without radical changes, expect many more Titans. As Lord Carter notes, the pressure on prison numbers is unlikely to abate. Mr Allen is gloomy: “This could be a watershed. We seem to be moving closer towards an American model.” That is some way off: America still locks up five times more of its citizens than Britain does. But the gap is narrowing. Since 1995 America's prison population has increased by 42%, while Britain's has jumped by 60%. In Europe, where numbers were already more restrained, Germany's inmates swelled by just 16%, and France's by 1%.

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Telephones in jail

Malfeasance, absence, silence

Dec 6th 2007
From The Economist print edition

How prisoners pay scandalously high rates

TOP of the list of complaints of many of Britain's prisoners is not the snoring of their cellmates, nor the quality of the food, but the difficulty and expense of making telephone calls. Mobiles are forbidden (though many inmates possess them), and most prisoners have only two hours a day in which they may use the payphones. These are limited in number and often broken, and the queues tend to be long. The charges are high, too. The minimum rate for a call to any United Kingdom land-line number is 10p, which buys 55 seconds of chat, after which it is 1p for every 5.5 seconds. To call a mobile costs 19-65p per minute. These rates are less egregious than those charged by other providers to many hospital patients, who are similarly unable to shop around. But they are higher than in public call boxes and for prisoners, whose average wage is £8 a week, they are mountainous.

Then inmates had better stay silent, is one response: those who commit crimes must expect to forfeit access to the conveniences of modern life. The counter-argument is, in the words of Charles Clarke, a recent home secretary, that an offender “is much less likely to reoffend if he feels part of a family and community, from which he receives support as well as owes obligations”. As it is, 45% of prisoners lose contact with their families during their sentence.

In some ways, visits would be better than calls. But such is the overcrowded state of British prisons that last year male inmates were, on average, held 50 miles (80km) from home and women 58 miles. For the 10,700 or so prisoners imprisoned more than 100 miles from home, visits were even more difficult.

Prison telephones in England, Wales and Northern Ireland are run by BT, which won the contract from the Prison Service in 1998. BT has unusual costs in that the prison phone system is small and must allow the monitoring of calls. It points out that it won the tender against competition, and that anyway the Prison Service sets the rates.

Critics, however, say the charges could, and should, be renegotiated. Telecoms rates have generally fallen in the past ten years but in prisons are fixed until the contract ends in 2011. And prisoners have no choice but to use BT.

Protests have so far been to no avail. With the backing of the prisons ombudsman, a prisoner has been trying to get the Prison Service to lower its charges, saying his rights to respect for family life, codified under Article 8 of the European Convention on Human Rights, have been infringed. But in November a High Court judge ruled against him.

Bad news for prisoners, certainly, and especially for the many illiterates among them (82% have the writing ability expected of an 11-year-old) and for the 14% who are foreigners (calls abroad are even more expensive than domestic ones). But the innocent, too, are victims. As a report from several prison charities this week points out, 160,000 children each year have a parent who is sent to jail. That is more than the number of children whose parents get divorced. Nearly a third of these children suffer from mental-health problems.

It's good to talk, as BT used to say. Too bad if you, or your dad, can't afford to.

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Cancer and strokes

Intimations of mortality

Dec 6th 2007
From The Economist print edition

Healing those who harm themselves

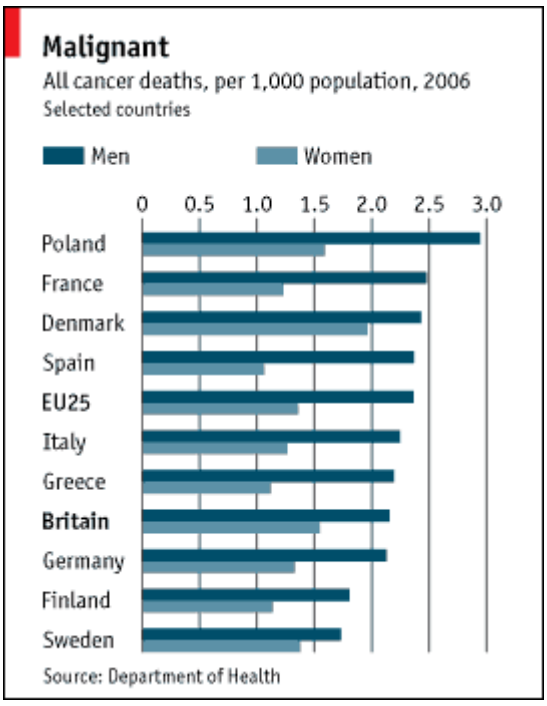
IT IS unpleasant to reflect that we will all perish one day—and even worse to suspect that the health service meant to look after us may have a hand in our demise. But that is what many Britons fear. Outbreaks of hospital-acquired infections such as MRSA and *C. difficile*, and stories of women in labour without a midwife and old folk unwashed and unfed, make admission to hospital seem like a game of Russian roulette. Meanwhile, rulings by the National Institute for Health and Clinical Excellence, which has the power to decide which medical treatments offer sufficiently good value that they should be paid for by the NHS, guarantee a stream of headlines about how ailing Britons are denied treatments that are standard abroad.

Challenging this perception that the NHS is likely to fail voters in their hour of need was, presumably, the reason why the prime minister, Gordon Brown, joined the health secretary, Alan Johnson, for the announcement on December 3rd of a new national cancer strategy. This committed an extra £370m over the next five years to spotting cancers earlier and ensuring better treatment for those who develop the disease. More radiotherapy equipment and staff will account for £200m; and breast, cervical and bowel screening programmes will be expanded.

The main thrust of the plan, though, was to improve prevention rather than cure. Over half of all cancers could be prevented by changes to lifestyle, it says. Cigarette-vending machines and coin-operated sunbeds face curbs in an attempt to make it harder for youngsters to smoke or fry themselves to a melanoma-inducing crisp. And from 2008 schoolgirls will be vaccinated against HPV, a virus implicated in 70% of cases of cervical cancer.

Smoking, drinking and obesity are the big culprits; all are hard to change, but the government will keep on trying. More graphic warnings on cigarette packets, and an advertising campaign to teach people how to keep track of the amount they drink, may have a positive, if limited, impact on the first two. But a "cross-government strategy to tackle obesity", to be published "shortly", looks like an admission that no one knows how to tackle the third.

Behind all this activity is a nagging feeling that Britain is not getting good value for the money it has put into cancer care. By international standards, mortality rates from the disease are middling (see chart), although the high numbers of British women who smoked in the 1980s and 1990s pushed up the incidence of lung cancer. Improvements in survival rates only show up many years later, of course. But the most recent figures, which indicate how many of those whose cancers were diagnosed before 2002 were alive five years later, suggest that Britons fare worse overall than most other Europeans. Survival rates were highest in the Nordic countries (except Denmark) and lower than average in Britain. In general, countries that spent more fared better; but Britain had lower survival rates than other countries with similar expenditure.



Just two days after the new cancer strategy was unveiled, another national plan, this time for preventing and dealing with strokes, joined it. (Mr Johnson was allowed to handle this one without his boss by his side; not for nothing is stroke known as the silent killer.) The plan offers brave words about preventing 20,000 strokes a year by promoting healthy living and prescribing statins more widely. And those patients who have minor strokes are to be guaranteed an MRI scan within a week

(only 35% of centres manage this at present), or within a day if they are at high risk of suffering a full-blown stroke. The Department of Health reckons this could reduce by four-fifths the number of people who go on to have a more serious stroke.

Sandwiched between the two plans was a worrying report on maternal mortality, which is still low in Britain, but is rising. The report from the confidential inquiry into maternal deaths condemned poor standards of care, but also found that, of 295 women who died while giving birth between 2003 and 2005, half were overweight and 15% were very obese. Another reminder that, whereas patients hope the NHS will look after them, the NHS needs them to look after themselves.

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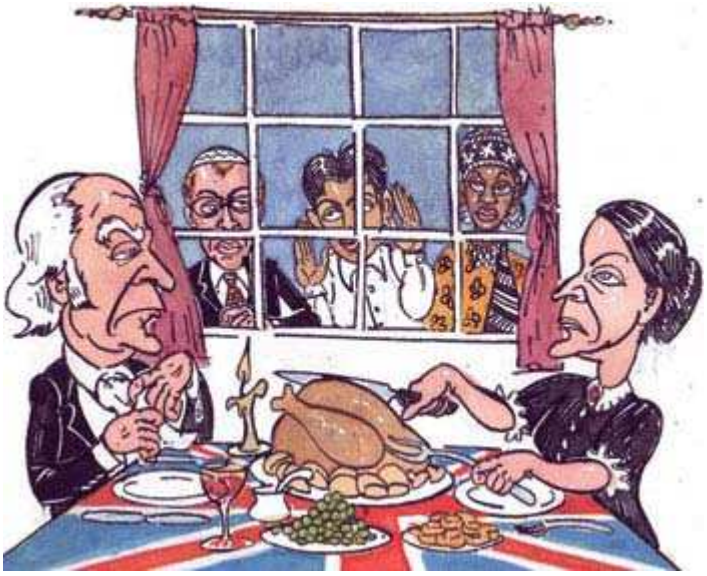
Bagehot

The meaning of Podge

Dec 6th 2007
From The Economist print edition

What the funding scandal really tells us about Britain, its Jews and immigrants in general

Illustration by Steve O'Brien



DAVID ABRAHAMS; Jon Mendelsohn; Lord Levy (also known as “Lord Cashpoint”). Notice anything funny about those names, and some of the others at the heart of the previous and present furores over political funding? Maybe—and ideally—you don't. But some people have spotted a theme. A front page in the*Daily Telegraph* featured a photograph of Mr Abrahams—who donated more than £660,000 ($1.4m) to the Labour Party using illegitimate intermediaries—shaking hands with the Israeli ambassador. The nudge-nudge headline was “Hunt for the ‘real donor'”. An intrepid columnist in the *Independent* dared, as she put it, to incur “the wrath of Moses” by questioning the involvement of the “shape-shifter” Mr Abrahams and the others with a pro-Israel lobbying group.

Britain's discomforted Jewish community has definitely noticed. “A second ‘Jewish scandal'” was the nervous headline in last week's *Jewish Chronicle*. But the interesting thing about the Jewish connection to these episodes is probably not the conspiracy imagined in a few fevered gentile minds. It is rather the insight they may offer into a different sort of anxiety, another kind of suspected conspiracy—one which may also exist more in imagination than in fact, but is important nonetheless.

Macher or nebekh?

Motive is often difficult to fathom. Acts that look virtuous crumble under scrutiny; charity comes to look like moral self-aggrandisement or self-interest. In the case of Mr Abrahams's donations, there have been unsubstantiated hints that he was hoping for a more tangible payback, such as a peerage or favouritism for his businesses. Even he may not know precisely why he gave so much and in the manner that he did.

But a little digging in his native north-east suggests that the nudge-nudge view of him (it is worse online) is wide of the mark. Mr Abrahams was apparently known as “Podge” at school and, later, as “Daft David” in the town-hall circles that he tried unsuccessfully to penetrate. He was the only child of a respected father; when the father died, Mr Abrahams was reluctant to release the body for burial. Though not all of his dealings seem to have been completely straight, he is seen less as a Machiavel than as a fantasist: in Yiddish parlance, less a *macher* (a big-shot) than a *nebekh* (someone to be pitied). Still, odd though he may be, in his need to be seen, and see himself, in the company of the powerful, he seems to epitomise

a common syndrome: common among Jewish men of his generation and older, and among immigrants to Britain in general.

“It appears”, remarks one observer of Anglo-Jewry, “that the ambition of the well-to-do and rising immigrant community soars after some kind of official dignity.” That was written in 1900, in the middle of the great wave of immigration responsible for most of Britain's current Jewish population. Like Mr Abrahams, who gives money to universities but did not go to one himself, most Jews in Britain then had little chance to distinguish themselves through their careers or in high office. Instead, many sought—like Mr Abrahams's father, once Lord Mayor of Newcastle—to do so in local politics or societies. The same urge for recognition, for an outward show of arrival and belonging, still grips some Jews, and many other newcomers, today.

Why? A century ago anti-Semitism was widespread: Britain's first immigration laws were introduced in 1905 to slow the influx of impoverished Jews (the folk memory of that poverty helps to explain many Jews' philanthropic streak). But the view of modern Britain as rampantly anti-Semitic, which sometimes features in American narratives of European decline, and in the scaremongering of some British-Jewish columnists, is wildly overblown. Anti-Semitism still exists: in the refectories of certain public schools, on the far right, among some Muslims, and in the tropes and Fagin allusions for which some journalists lazily reach. But it can also be found among Montana survivalists, in Connecticut country clubs and in the Nation of Islam.

The truth is that Britain today is one of the best places to be Jewish, ever. Jews no longer need to camouflage themselves against prejudice; nor do they bump up against a “glass ceiling”. Mr Abrahams, like Lord Levy during the dénouement of “cash-for-honours”, is seen by some as a sort of Trollopean “Court Jew”, thrown to the wolves when circumstances demanded. But the key fact is that there are, and have long been, Jews in the establishment's upper reaches (“more old Estonians than old Etonians”, Macmillan jibed of Margaret Thatcher's cabinet).

The real cause of the syndrome is subtler than that. It is a vague but powerful sense, which many immigrant antennae pick up, that there is somewhere an inner sanctum of Britishness, an elusive top table, to which, by reason of birth and class, the newcomer is not invited, ostensibly welcomed though he may be. Finding a way to it, through lavish acts of patriotism or patronage, becomes for some a mission more compelling than money. Three or four generations in, most Jews have outgrown those neuroses; but some haven't, and other, newer ethnic groups, such as some Anglo-Indians, have acquired them.

The funding row rumbles on, as politicians confess fresh accounting indiscretions. More may emerge about Mr Abrahams's role. So far the main lessons are that the rules on donations need to be overhauled, as Gordon Brown now promises—and that, whatever they are, they should be obeyed. If the backgrounds of some of those involved suggest a further conclusion, it does not concern either anti-Semitism or nefarious lobbying. It has to do with the mixed feelings of marginality and ambition immigrants to Britain experience. Those feelings are visible in another, more revealing photo that has surfaced of a young Mr Abrahams: dressed to the nines, with his parents and his granny, for a garden party at Buckingham Palace.

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Economist.com WORLD INTERNATIONAL

Education

The race is not always to the richest

Dec 6th 2007
From The Economist print edition

Alamy

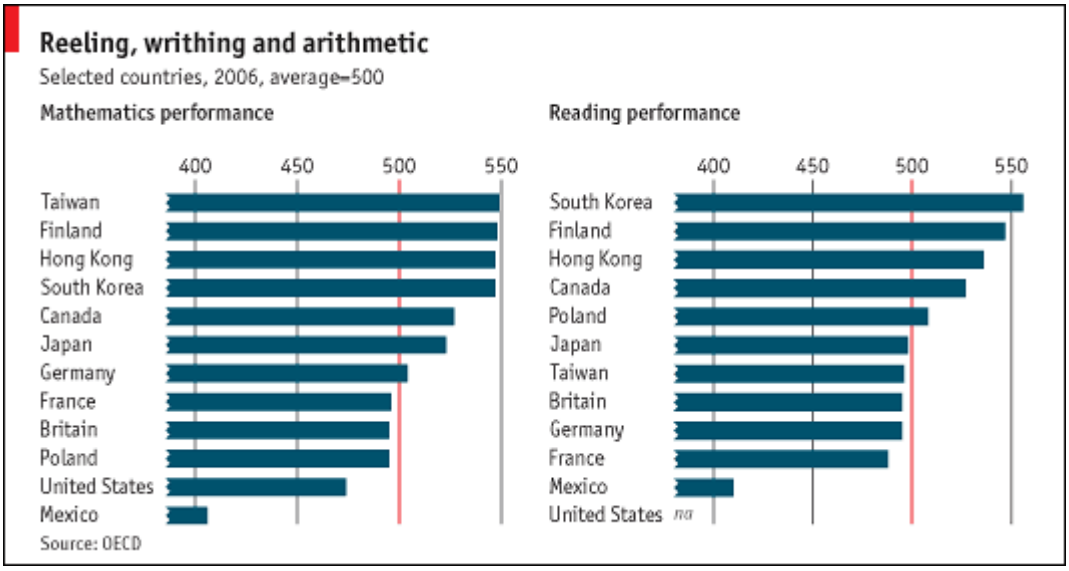
Money and effort aren't enough to impart the skills and knowledge needed in a cut-throat world

SPOOKED by the effects of globalisation on their low-skilled citizens, rich countries have been pouring money and political energy into education. In the United States, it has been proclaimed that no child will be left behind. Whether this programme, launched by George Bush in 2002, has raised standards will be a big issue in the 2008 presidential election. Next year Britain will introduce ambitious new qualifications, combining academic and vocational study. For the industrial countries of the Organisation for Economic Co-operation and Development (OECD), average spending on primary and secondary schooling rose by almost two-fifths in real terms between 1995 and 2004.

Oddly, this has had little measurable effect. The latest report from the OECD's Programme for International Student Assessment shows average attainment staying largely flat. This tome, just published, compares the reading, mathematical and scientific progress of 400,000 15-year-olds in the 30 OECD countries and 27 others, covering 87% of the world economy. Its predecessors in 2000 and 2003 focused on reading and maths respectively. This time science took centre stage.

At the top are some old stars: Finland as usual did best for all-round excellence, followed by South Korea (which did best in reading) and Hong Kong; Canada and Taiwan were strong but slightly patchier, followed by Australia and Japan. At the bottom, Mexico, still the weakest performer in the OECD, showed gains in maths; Chile did best in Latin America.

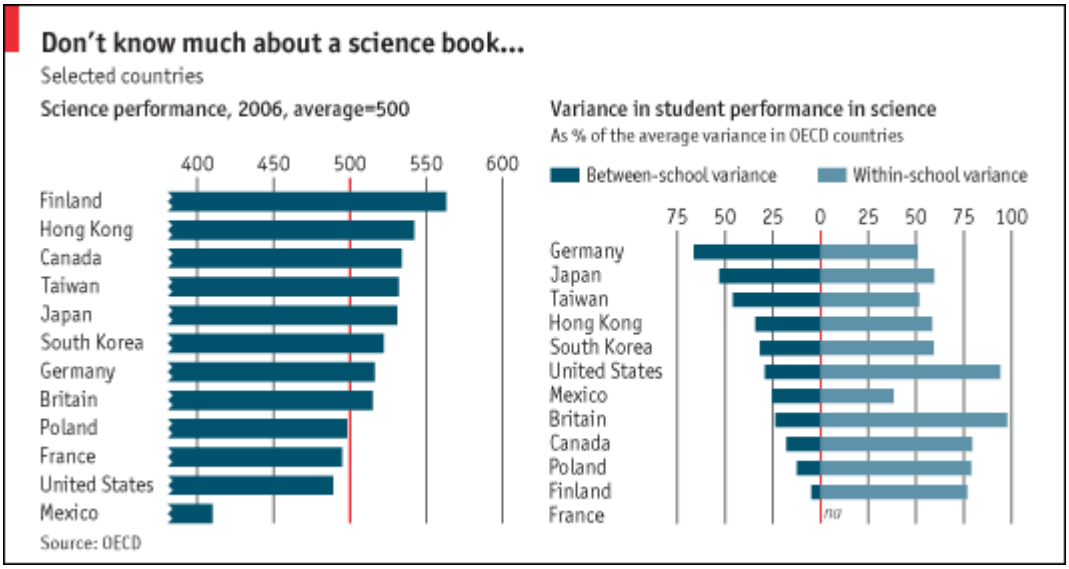
There is bad news for the United States: average performance was poor by world standards. Its schools serve strong students only moderately well, and do downright poorly with the large numbers of weak students. A quarter of 15-year-olds do not even reach basic levels of scientific competence (against an OECD average of a fifth). According to Andreas Schleicher, the OECD's head of education research, Americans are only now realising the scale of the task they face. Some individual states would welcome a separate assessment.



The results are unsettling for Britain, too. The country was excluded from the OECD's 2003 study because its sample of students was so poor. That, conveniently, disguised what is now apparent: that the excellent results of 2000, when the country came seventh in reading and well above average in both maths and science, were a statistical blip. This time Britain is way down the league in all three subjects. OECD analysts and British officials are highlighting the good news: immigrants do comparatively well, and 3% of British students put in top-ranking performances in science, as compared with only 1% across the OECD. “A fresh start,” said OECD officials, diplomatically—but the results have embarrassed a government that claims to have put education at the top of its agenda for a decade.

The improvement prize went to Poland, an also-ran in 2000. That reflects not increased spending, but successful reforms in 1999, which ended the practice of early selection on ability. By the second study, in 2003, the gains were already noticeable—and so marked that OECD statisticians cautioned privately that two data points do not make a trend, and decided to wait and see what happened next time. Further improvements have dispelled all doubts, making Poles the poster children for the proposition that early “tracking”—allocating pupils to different sorts of schools or programmes—hurts weak ones without benefiting the rest. “We have learnt that you can really make a change by bringing weaker performers into more demanding streams,” says Barbara Ischinger, the OECD's director of education.

Letting schools run themselves seems to boost a country's position in this high-stakes international tournament: giving school principals the power to control budgets, set incentives and decide whom to hire and how much to pay them. Publishing school results helps, too. More important than either, though, are high-quality teachers: a common factor among all the best performers is that teachers are drawn from the top ranks of graduates.



Another common theme is that rising educational tides seem to lift all boats. In general—the United States and Britain may be exceptions—countries do well either by children of all abilities, or by none.

Those where many do well are also those where few fall behind. A new feature in this year's study is an attempt to work out how differences between schools, as opposed to differences within them, determine performance (see chart). Variation between schools is big in Germany (to be expected, as most schools select children on ground of ability). But results also vary in some countries (like Japan) with nominally comprehensive systems. In top-performing Finland, by contrast, the differences between schools are nearly trivial.

And what can be done to ensure that budding scientists blossom? Give them teachers with excellent qualifications in science, spend plenty of time on the subject and engage their enthusiasm with after-school clubs, events and competitions, says the report. One does not need to understand string theory to grasp this, but doing the first two is hard. All science graduates, and physics graduates in particular, have a head start in other high-paid fields, such as financial services. And school curriculums are under constant pressure from meddlesome governments.

The last recommendation—sparking children's interest in the subject with appealing science-based activities—comes with a caveat: a keen interest in science does not always mean being good at it. Half of all young Mexicans fail to reach basic levels of scientific literacy, but they value science more highly than their counterparts almost everywhere else. And across the world, the less students know about science, the more optimistic they are about the chances of solving the planet's environmental problems.

Alamy

I'll show you how to be top

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Economist.com WORLD INTERNATIONAL

Sexual violence and conflict

War's other victims

Dec 6th 2007
From The Economist print edition

The scale of an unspeakable horror

FROM Bosnia's rape camps and the horrors of Rwanda's genocide in the 1990s to the atrocities being perpetrated daily in northern Congo and Sudan's Darfur region, the tally of body bags runs alongside another grim body count: the numbers of women and girls, but in some places men and boys too, subjected to rape and other forms of sexual violence. Reliable and comprehensive figures are hard to come by: victims are often too traumatised or too fearful to speak out. But a report on “Sexual Violence in Armed Conflict” by the Geneva-based Centre for the Democratic Control of Armed Forces (DCAF) picks its way as systematically as it can through conflict after conflict, in Africa, the Americas, Asia, Europe and the Middle East, piecing together the evidence.

It is grim reading. In Bosnia's war up to 50,000 women were subject to sexual violence; over 14 years perhaps 40% of Liberia's population suffered similar abuse; just under half those interviewed in a randomised study in Sierra Leone in 2000 had been raped, and more than a quarter had been gang-raped.

Such sexual violence can lead to severe physical as well as psychological damage: high numbers of fistula cases have been reported during conflicts in Burundi, Chad, Congo, Rwanda, Sierra Leone, Liberia and elsewhere. An earlier DCAF report recorded that an estimated 70% of Rwanda's rape survivors were infected with HIV/AIDS. The offspring of such violence are often stigmatised or abandoned as “children of hate”. In other words, the damaging health, economic and social consequences live on long after conflicts end.

Can such violence be curbed? In Darfur, marauding militias prey on women and children collecting firewood, food or animal fodder outside refugee camps. In some places, African Union peacekeepers have sent out trucks with soldiers to follow the women and provide as much protection as they can.

Alongside practical initiatives like these “firewood patrols”, DCAF calls, as have earlier UN resolutions, for more women peacekeepers. They get along better with locals and also improve the behaviour of their male counterparts (in Congo in 2005 the UN registered 72 allegations of sexual violence of one sort or another against its own troops; 20 were substantiated). The percentage of women serving in UN military and police units is tiny; but some women have recently had senior posts in UN missions. And earlier this year Liberia received the UN's first-ever all-female contingent—103 Indian policewomen. It would help, says DCAF, if victims of sexual violence were more involved and better cared for in programmes for disarmament and demobilisation.

But when it comes to curbing sexual violence during conflict, ending a culture of impunity is key. The statute of the International Criminal Court allows for the prosecution of rape and similar violence as war crimes, crimes against humanity and even potentially as acts of genocide. Earlier this year the chief prosecutor decided to focus one of the court's investigations on atrocities carried out in 2002-03 in the Central African Republic—where rapes may have exceeded murders.

The increasing use of rape, by governments as well as militias, as a weapon of war is to be the target of a UN General Assembly resolution that is expected to pass soon. After intense lobbying by Sudan (the resolution named no names, but evidently the shoe fitted) among the UN's Africa group, backed surprisingly by South Africa, the language of the resolution has been watered down somewhat. But it still calls for the UN secretary-general to report back next year on what is being done to protect civilians against sexual violence—and to hold to account, among others, governments that target their own citizens in this way.

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Economist.com WORLD INTERNATIONAL

Children's medicine

When a spoonful of sugar won't do

Dec 6th 2007
From The Economist print edition

Wanted: medicine for a group whose voice is still too small to be heard

IMAGINE a class of human beings, amounting to about one-third of world's population, whose needs are barely noticed by the people who are dealing with all the most pressing public-health problems. In fact, such a group exists: children, especially those in poor countries who are often among the first victims of epidemics and other life-threatening upheavals.

According to the World Health Organisation (WHO), about 60 essential medicines are unavailable in formulations appropriate for use by children. A general lack of child-friendly drugs has been made more obvious by the particular difficulty of treating children with HIV/AIDS, who have to ingest massive doses of nasty stuff. “Some kids with HIV need to take 12 huge tablets a day...and they taste horrible,” says Hans Hogerzeil, a specialist on medicines at the WHO. There are no suitable combination drugs—medicines that have two or more active ingredients, thus reducing the number of pills needed—no soluble tablets and very few syrups, he adds.

In the hope of making these and other medicines go down in at least a more bearable way, the WHO is trying to raise $50m from its member governments, for a fund that would kick-start the development of children's drugs—and highlight the need for governments and firms to pay more attention to youngsters' medical needs. Some rich countries have already taken steps in that direction. For example, America's Best Pharmaceuticals for Children Act, passed in 2002, puts more onus on the Food and Drug Administration to take children's needs into account when certifying drugs. But that law has more to do with avoiding risk to children than with helping positively to treat them.

Creating new drugs for children, especially babies, is not a straightforward business. Children metabolise drugs in a way that is quite different from adults. And when combination drugs are put together—for HIV/AIDS, for example—the proportions that suit children are not the same as those needed by grown-ups. In fact, combination pills for children can be three times more expensive than adult doses, because they are harder to make. Still, the WHO has identified a dozen combination drugs that ought to be developed in order to treat children with malaria, tuberculosis and HIV/AIDS.

The WHO wants some of its proposed fund to pay for the basic research necessary to create children's formulations. It will initially focus on a small group of diseases that account for most deaths among the under-fives, including HIV/AIDS, malaria, tuberculosis, pneumonia and various forms of diarrhoea. The biggest problems in children's medicine concern diseases that afflict the poor. But the shortage of child-friendly medicine is not confined to poor countries. Even in Europe, fewer than half of the drugs administered to children have been tested and authorised for their use. And there are gaps in the treatment of diseases not unusual among rich-world children, including epilepsy and psychotic conditions.

At present, very few clinical trials are conducted in children, partly because obtaining “informed consent” is hardly possible. (The WHO hopes that countries can at least compare notes on how to get round that problem.) This in turn deters pharmaceutical firms from researching and developing child-friendly medicines, and generic drug producers from producing low-cost versions. And before testing any new formulation on children, paediatric specialists have to make very hard judgments about the benefits and risks.

However, there are also risks in not creating children's drugs. At the moment, the lack of proper formulations forces health workers and parents to use fractions of the adult dosage; or else they resort to makeshift solutions such as crushing pills (and mixing them with something nice) or dissolving portions of capsules in water.

The WHO's hope is that by putting some public funds into research, it will lessen the risks for private firms, and simultaneously “convince and shame them into investing a bit more”. The Geneva-based body

is also giving gentle encouragement to those companies that have already started trying to close some of the more scandalous gaps. For example, the latest drugs for malaria, based on artemisin, have no child-friendly version, despite the fact that fully 40% of malaria cases occur in children. Sanofi-aventis, a pharmaceutical firm based in Paris, has been working to develop a new malaria drug for children. The WHO is backing this effort by helping the company make evaluations; the drug may soon—perhaps as early as February—be approved for UN procurement.

As for tuberculosis, another deadly killer of the young, no effective, child-friendly drug exists at present, even though the scientific knowledge to produce one certainly does. That is just one reason, say the policymakers at the WHO, why urgent action is needed to give that big, voiceless interest group a better chance of growing up.

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Economist.com
PRINT EDITION
TECHNOLOGY QUARTERLY

Getting serious

Dec 6th 2007
From The Economist print edition

Second Life

Computing: Virtual worlds are being put to serious real-world uses—and are starting to encounter some real-world problems

IT IS a typical example of the colonisation of a new frontier. A few intrepid explorers stake out some new, unexplored territory. Before long the first settlers move in and start to look for ways to make a quick buck. Their success attracts more settlers, and an unruly bonanza ensues; finally the policemen, lawyers and tax collectors show up. But the territory in question is not a new continent: it is the realm of cyberspace, where two developments suggest that virtual worlds are coming of age. The first is the emergence of commercial uses for virtual environments; the second is the advent of litigation and regulation.

Many of the serious uses of virtual worlds were on show at a conference held in September at Coventry University in England. Aptly, people could also take part in the conference by visiting an online re-creation of the university's Serious Games Institute, where they could chat with other participants and watch presentations. David Wortley, the institute's director, says half those attending did so this way. The focus of the conference was the application of computer-game technologies and virtual environments to real-world business problems.

With the popularity of virtual worlds such as Second Life and games such as “World of Warcraft” and “Sims Online”, companies, academics, health-care providers and the military are evaluating virtual environments for use in training, management and collaboration. Superficially, such uses look a lot like playing a video game. “The thing that distinguishes them from games is the outcome,” says Mr Wortley. Rather than catering to virtual thrill-seekers, the aim is to find new ways for people to learn or work together.

Blitz Games, for example, the firm behind “Karaoke Revolution” and other games, has applied its technology in a rather more serious field: the development of a medical-triage simulator. The idea is to use it to train paramedics, doctors and firefighters in prioritising care immediately after a disaster. “We are simulating the scene of an explosion on a high street,” says Mary Matthews of Blitz's TruSim division. Players observe the virtual patients and gauge their respiration, pallor, bleeding and level of distress; then they use this information to determine which of them is in greatest need, all against the clock. Each player's performance is scored according to an industry-recognised training protocol. Real-life exercises could achieve the same objective, but the simulated environment cuts costs and improves access.

The same technology can also be used to simulate the more mundane environment of an office. PIXELearning, a British company based in Coventry, has developed a simulator for a big international accounting firm in order to train interns who are fresh out of university. The role-playing simulator lets them develop their skills by interacting, for example, with a difficult client who is being aggressive on pricing. This is invaluable, says Kevin Corti, PIXELearning's boss, because it allows them to make

mistakes before being unleashed on a client. Similarly, a big American bank is using PIXELearning's simulator for “diversity and inclusion” training.

Cisco, an American network-equipment giant, is using virtual worlds to improve internal collaboration, says Christian Renaud, the company's “chief architect of networked virtual environments”. Such environments are used to host meetings and to create virtual workspaces for employees who may be part of the same team but spread out over half a dozen countries. The hope is that the use of virtual worlds, rather than more structured forms of communication such as e-mail or conference calls, will make serendipitous meetings more likely and interpersonal networking easier. Holding business meetings in a simulated environment is not quite as glamorous as the depictions of virtual reality found in science fiction. But it makes a change from the usual drab meeting rooms.

Here comes trouble

It is not just office workers who are taking their first steps into virtual worlds. So too are lawyers, as disputes in such environments spill over into real-world lawsuits. Such disputes often concern the trade in virtual goods and services, which are bought and sold for real money. In some countries lawsuits over virtual goods are already common. Unggi Yoon, a judge in the Suwon District Court in South Korea, estimates that Korean courts have heard nearly 300 cases of fraud and more than 60 relating to hacking in virtual game-worlds. Similar fights have broken out in American courts, too. So much for escapism. “I have heard from other players that the element of fun in the game has been diminished by thinking of all these legal issues,” says Sean Kane, a virtual-worlds specialist at Drakeford & Kane, a law firm in New York.

Real-world trade in virtual items is allowed in virtual worlds that are intended to simulate reality, such as Second Life and Entropia Universe. And it has been going on for years among players of “massively multiplayer online” role-playing games such as “World of Warcraft”, “EVE Online” and “Lineage II”, even though such trading is banned in many game worlds, since it upsets the competitive balance if some players buy weapons or armour rather than earning them in the game. “We don't allow real-money trades in our games because we think it creates an unfair advantage to those who are trying to play the game as it was created to be played,” says a spokesman for NCsoft, the maker of “Lineage II”.

In practice, however, preventing trade in virtual items is difficult, and several dedicated trading platforms have emerged to enable players to buy and sell in-game items. One of the biggest, IGE, based in Hong Kong, is now being sued by a “World of Warcraft” player who claims it has spoiled his online fun. Mr Kane says the value of virtual items traded hit $1 billion in 2006. Dan Kelly, the boss of Sparter, a trading platform based in Menlo Park, California, says that figure will double this year.

With such large sums at stake, it is not surprising that other unpleasant aspects of real life are starting to appear in virtual worlds too. In May two players were banned from Second Life for depicting sexual activity between an adult and a child. Eros, a company that sells sex-related add-ons in Second Life, filed a lawsuit in July against an inhabitant of the virtual world for selling unauthorised copies of its SexGen bed, which facilitates sex between in-game characters. “When you have a community that is an extension of Newark, eventually you will have the ills of Newark going on,” says Edward Castronova, a virtual-worlds expert at Indiana University. Some people think the very nature of virtual worlds can inspire bad behaviour. Such environments provide “anonymity along with a lack of social recourse,” notes Gus Tai, a venture capitalist at Trinity Ventures in California's Silicon Valley.

Just like the real world in some respects—but not others

Bad behaviour is not the only problem. The growing value of commerce in virtual worlds has provoked interest from the taxman, too. Governments in America, Britain and Australia have all said they are considering a new tax on real-world profits from virtual trade. Mr Castronova is aghast. “Monopoly is not a very fun game if I have to pay a tax every time I buy Boardwalk,” he says. South Korea actually imposed such a tax in July.

One way to deal with unwanted activity, in virtual worlds as in the real one, is to decriminalise and regulate it, rather than trying to outlaw it altogether. That is the approach taken by Sony Online Entertainment (SOE), the company that runs “EverQuest II”, a fantasy world of dragons and busty blondes. It found that some 30-50% of customer-service calls concerned scams relating to real-world trade in virtual items. So it divided the game world in two and made trading legal in one part but not the other; players can choose which to play in. As a result, says Greg Short of SOE, the share of calls relating to scams is now less than 10%.

Despite these problems, things are not really so bad, argues Dan Hunter of New York Law School, who is writing a book about the social significance of virtual worlds. “If you look at the numbers, there are so few events of fraud and problematic activity,” he says. Robin Harper of Linden Lab, the firm behind Second Life, agrees. “Social networks, online auctions, classifieds and even the internet itself have all encountered issues of appropriate content, taxation and the use of intellectual property,” he says. “If anything, we are proud that against this backdrop, there are relatively few disputes.”

As with any novel technology, virtual worlds bring new opportunities and new problems. The embrace of virtual worlds by companies for mundane uses on the one hand, and by scam artists to get up to no good on the other, points not to the shortcomings of such environments—but to their increasing maturity and potential. “I don't think this is the end to fun and games,” says Mr Kane. “I think it's only the beginning.”

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Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

No fridge required

Dec 6th 2007
From The Economist print edition

Medicine: A technology that mimics nature should allow sensitive biological samples to be stored at room temperature

Oxford Scientific

Just add water

EVEN miracles have their price. When DNA fingerprinting was introduced in 1984, it was an extraordinary advance in forensic science. It was also an irresistible temptation to the public authorities to start building databases of their criminal (and often not-so-criminal) citizens' genetic profiles. Regardless of the rights and wrongs of those decisions, these databases have created a need for the mass storage of biological samples.

Keeping samples in refrigerators—the usual way of preserving them—is precarious. Power supplies can be interrupted. Thermostats may be mis-set. Things can go missing because they have been put at the back of the fridge and forgotten about, rather than having been stored with other, less perishable evidence. And even if all of these problems are avoided, preservation is not perfect. The average sample lasts for about a decade, which is not really long enough if the sample itself, rather than just a computer record of its details, is needed for future reference.

It would be far better if there was a way of keeping such samples at room temperature. And now there is. Biomatrica, a firm based in San Diego, California, has taken a leaf out of the book of the humble brine shrimp (pictured) in order to dry samples, rather than freeze them.

Readers of a biological bent may recall buying Sea Monkeys in their youth. These creatures (or, rather, their eggs, which are sold dried in packets) magically came to life when put in water. The eggs are able to survive desiccation (to a water content of less than 1%) because their cellular structure is stabilised by sugar molecules that act like a glass casing. Biomatrica is applying this principle to storing DNA and other biosamples. In place of the sugar molecules it uses a special polymer that dissolves in water, wraps itself around the DNA of the sample, and then holds on to and protects that DNA as the sample is dried out.

According to Judy Muller-Cohn, Biomatrica's boss, the firm has simulated long-term storage equivalent to 13 years at room temperature, by applying higher temperatures than samples would normally endure. Such storage costs a third as much as freezing the samples would. And when a sample is needed for analysis, you just add water, *à la* Sea Monkey.

The market for this sort of thing is potentially huge. In contrast with the impression given by “CSI”, a popular crime series, DNA analysis is not something that takes a glamorous technician a few minutes in a moodily lit room. America's Federal Bureau of Investigation alone has a backlog of more than 200,000 unprocessed DNA samples from convicted criminals (about 85% of the samples it has collected during the past six years). This number has almost doubled in the past year, yet it may grow even faster in the future since what was once a procedure required only for sex offenders has now become obligatory for a range of felons from murderers to drug-addicts. Moreover, starting next year, both the federal authorities and a number of states will cast an even wider net by collecting DNA from everyone they arrest (as now happens in Britain). That will swell the haul of samples by at least half a million specimens a year.

Nor is the market restricted to forensic science. Cambridge Biostability, a British firm, has developed a sugar-based stabilisation technique to store vaccines at room temperature. GenVault, a firm based in Carlsbad, California, which uses a type of high-tech blotting paper to dry out sample materials, has signed a deal with the government of Quebec to build a “biobank” of samples for medical research. And Biomatrica's approach is being used by GlaxoSmithKline, a pharmaceutical giant, to transport samples between its laboratories in America and Britain. Even NASA, America's space agency, is in on the game. It reportedly wipes down its spacecraft when they return in case they are carrying traces of alien genetic material. Any Martian murderers must be quaking in their boots.

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Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Accelerated progress

Dec 6th 2007
From The Economist print edition

Medicine: "Microdosing" borrows from archaeology to provide a novel way to test the effectiveness of new drugs without hurting anybody

MULTIDISCIPLINARY science is all the rage these days. Even so, the overlap between archaeology and pharmacology is not, at first sight, obvious. But there is a connection. An analytical technique developed for the former, used to work out how old things are, is now being used in the latter, to see if promising drugs are likely to fail before expensive clinical trials are undertaken.

At the moment, a third of drug candidates do not pass such trials. This may be because they fail to reach the part of the body where they are intended to work—many molecules, for example, cannot cross from the bloodstream into the brain. Or it may be that the body breaks down the active ingredients before the drug has time to act. Identifying such problems early in the testing process would be a boon. Trials on animals can help, but how other species react is not always a good indication of how people will. What is needed is a way of testing potential drugs on people, but in a way that cannot possibly cause any harm. That is where the archaeologists come in.

For decades, archaeologists have used a technique called carbon dating to work out how old their finds are. Some of the carbon dioxide absorbed by plants during photosynthesis is radioactive. That is because it contains carbon atoms which are heavier than run-of-the-mill carbon, and are unstable. The radioactive carbon atoms weigh 14 atomic units, whereas run-of-the-mill ones weigh 12 units. Food grains, scraps of cloth, bits of wood and so on can thus be dated by finding out how much radioactive carbon is left in them: the less there is, the older they are.

To measure this, archaeologists use a device called an accelerator mass-spectrometer. This machine shatters tiny amounts of a sample into its component atoms, ionises those atoms in order to give them an electric charge, and then uses that charge to attract the atoms along a tube. As they travel, they are deflected by a magnetic field. Light ones are more easily deflected than heavy ones, so the two forms of carbon get separated, and when each atom reaches a detector at its expected arrival spot, it can be counted. The technique is so sensitive that it can detect a single radioactive carbon atom hiding among a quadrillion (one million billion) ordinary ones.

A few years ago researchers at the Lawrence Livermore National Laboratory, in California, realised that accelerator mass spectrometers tuned to detect radioactive carbon might be adapted to see how drugs survived in the body. This would involve slipping a few radioactive carbon atoms into molecules of the drugs in question. And it has now been done. Volunteers are given tiny traces of a radioactively labelled drug—too small to harm them, and typically just one-hundredth of the estimated full dose—in a drink. Blood samples are taken every few hours for two or three days, and urine and faeces are also collected.

By examining these samples for the presence of radiocarbon, the developer of a particular drug can see whether the active ingredients are absorbed into the body and, if they are, how long they persist there. If they do get absorbed and then persist, the drug is probably worth developing further. If not, then it can be abandoned before any more expensive tests are conducted. And by using people rather than experimental animals for the tests, the researchers can be confident that the results are applicable to humans.

Regulatory authorities in America, Europe and Japan have welcomed the idea of microdosing, as the technique is known, and are developing guidelines for its use. Meanwhile, a number of firms have already been established to offer the technique to drugmakers. One of them, Xceleron, which was formed by scientists from the University of York, in England, has already tested 40 molecules and has recently signed contracts with several large drug companies. Given the difficulties and delays involved in developing new drugs, microdosing could offer the industry a shot in the arm.

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The eyes have it

Dec 6th 2007
From The Economist print edition

Medical technology: The techniques used to replace worn-out eye lenses are getting better, making the process simpler than ever

Bausch & Lomb

PAUL URSELL, an ophthalmic surgeon who works at St Helier hospital, just outside London, is one of the first people in Britain to use a new piece of equipment called the Stellaris (pictured). This is an all-in-one lens removal and replacement kit, looking rather like a robot, that is designed to treat people whose natural lenses are going cloudy, thus making them blind. It is the latest development in the technology of replacing damaged eye lenses with artificial substitutes. These improvements are simplifying and speeding up the surgery involved.

The ability to remove lenses darkened by cloudy imperfections, known as cataracts, and replace them with artificial lenses, is more than half a century old. It started with the chance observation during the second world war, by Harold Ridley, a British eye doctor, that pilots whose eyes had been penetrated by acrylic-glass shrapnel from cockpit canopies did not suffer an immune reaction.

Perspex lenses have long since been replaced by acrylic ones. But now the whole process of inserting those lenses is changing too. One of the biggest innovations has been the introduction of microsurgery. Originally, inserting a new lens meant cutting a flap in the eyeball some 11mm across. Today's microsurgery requires a cut of less than 2mm. Such small wounds heal by themselves, and do not need to be stitched. The whole process is thus less traumatic, and patients are often able to return to work the day after an operation.

Two technologies in particular have helped to reduce the size of the incisions needed. The first, phakoemulsification, uses a tiny ultrasound probe to remove the lens. An ageing lens goes yellow, cloudy and hard. Mr Ursell likens its texture to that of a gravy cube. Exposing such a lens to high-frequency sound waves breaks it up into an emulsion that can then be sucked out of the eyeball. The second innovation is injectable lenses. Progressive improvements in the design and material of artificial lenses mean it is now possible to roll them up, inject them into position in the eye through a narrow slit, and then have them unfold naturally into place.

The tools to perform these tricks have been available for a while. The novelty of Stellaris—which is made by Bausch & Lomb, a company based in Rochester, New York—is that all the pieces of kit are pulled together into a single snazzy piece of equipment. The system can extract lenses, keep the eyeball inflated, and inject lenses in several different ways. The Stellaris has options to use an older or a newer surgical technique, depending on the surgeon's preference.

The newer form of surgery arranges the instruments into two tools which enter the eye through identical tiny slits. One tool provides the ultrasound waves that are used to break down the cataract, and also contains a vacuum to hoover out the pieces. The other tool provides fluid to maintain the pressure while the lens is being extracted. That prevents the eyeball collapsing.

In short, a useful innovation. But lens replacement is not yet perfected, largely because replacement lenses themselves still have room for improvement. Standard replacement lenses have no ability to focus, so the wearer is often stuck with excellent distance vision but must use glasses for reading. That can be addressed with multifocal lenses, which have concentric rings of material that offer alternate bands of near and distant vision. But these can cause problems of their own with the patient's night vision and sensitivity to contrast.

What excites ophthalmologists most, and what every lens-making company wants to achieve, is an

“accommodating” lens that can change its focal length in the same way that a natural lens does. A few such lenses are already on the market. The Crystalens from Eyeonics of Aliso Viejo, California, is one example. The Tetraflex by Lenstec of St Petersburg, Florida, is another. These products use the existing eye muscles to change the shape of the lens and move it backwards and forwards in the eye during focusing. Such products are soon likely to replace multifocal lenses.

After that, light-sensitive silicone lenses may be next. These can be customised after surgery by playing a low-intensity beam of light onto their photosensitive material. This causes it to polymerise and then change shape, which means the ophthalmologist can tweak the lens to alter its power. Raging against the dying of the light, in other words, now has powerful technological allies.

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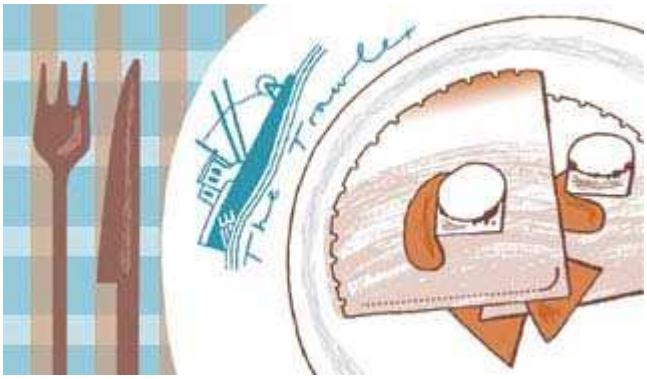
Shellfish desires

Dec 6th 2007
From The Economist print edition

Illustration by Robin Chavalier



Fishing and the environment: A new invention makes trawling for fish much less harmful to coral, sponges, seaweed and other denizens of the seabed

TASTY species live at the bottom of the sea. Plucking these morsels from their habitat, however, is often a violent affair that destroys other denizens of the deep. Now researchers have developed a more benign way to fish.

Trawling is the most widespread form of fishing. But bottom trawling is brutal. It uses an enormous, toothed bar mounted on a device called a dredge to scrape the seabed. Dredging throws the intended catch up into a cloud that is captured by a net trailing behind. Unfortunately, the cloud contains a lot of other stuff. Anything at or just below the surface of the seabed—the benthic zone, in fishery parlance—gets dragged up. The result is that a lot of other types of fish, crustaceans and molluscs are caught unintentionally.

More worryingly, sponges, seaweeds and centuries-old coral are destroyed. This is serious because such sessile creatures are not merely part of the ecosystem. In a sense, they are the ecosystem—in the way that it is plants rather than animals that define a forest. Indeed, trawling has been compared to clear-cutting trees. And from a practical point of view, this destruction of habitat contributes to the dwindling of fish stocks worldwide.

However, in one case—scallop trawling—Cliff Goudey of the Massachusetts Institute of Technology reckons he has a solution. He and his team have designed a dredge that can dislodge scallops without touching the seafloor.

The dredge has several hemispheric scoops in place of the toothed bar. As it is pulled along, the scoops direct water downward. That creates a series of gentle jets that can shuffle the scallops from their resting places—but the streams of water are not powerful enough to damage the benthic zone's long-term tenants. And the scoops swivel out of the way if they encounter anything solid, so the dredge does not destroy such protuberances. Best of all, from the fisherman's point of view, it takes less effort to float a dredge on water jets than it does to drag it across the uneven surface of the seabed. That makes Dr Goudey's new device a more fuel-efficient way to fish than the traditional method.

Having assessed a prototype both in a laboratory tank and in the sea off the coast of Massachusetts, Dr Goudey was recently invited by the University of Wales to test his invention against a traditional dredge. New and old designs were dropped from the stern of a trawler and towed across the seabed off the Isle of Man. They each caught the same number of scallops. The new dredge, though, damaged the catch much less than the traditional one.

Further tests will take the dredge over the regulatory hurdles toward commercial use. Visserijcooperatie Urk, a Dutch fisheries-equipment firm, has already expressed an interest in using the new device to catch sole, another bottom-dwelling species. A humble start—but it may yet be worth keeping an eye out for

coral-friendly scallops next to the bird-friendly coffee.

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Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Heat from the street

Dec 6th 2007
From The Economist print edition

Energy: A clever new system uses asphalted roads, rather than solar panels, to collect solar energy in order to heat an office building

SOMETIMES the simplest ideas are the best. To absorb heat from the sun efficiently you need large, flat, black surfaces. One way to do that is to construct those surfaces specially, on the roofs of buildings. But why go to all that trouble when cities are full of black surfaces already, in the form of asphalted roads?

This was the thought that occurred ten years ago to Arian de Bondt, an engineer who works for Ooms, a Dutch building company. Dr de Bondt eventually persuaded the firm to follow it up. The result is that its headquarters in Scharwoude is now heated in winter by a system that relies on the surface of the road outside.

The heat-collector itself is a circuit of connected water pipes. Most of them run from one side of the street to the other, just under the asphalt layer. Some, however, dive deep into the ground. In summer, when the surface of the street gets hot, water pumped through the pipes picks up this heat and takes it underground through one of the diving pipes. About 100 metres down lies a natural aquifer into which a series of heat exchangers have been built. The hot water from the street runs through them, warming the groundwater, before returning to the surface via another pipe. The aquifer is thus used as a heat store.

In winter, the circuit is changed slightly. Water is pumped through the heat exchangers to pick up the heat that was stored during summer. This water goes into the Ooms building and is used to warm it up. The water is then pumped under the asphalt, and the residual heat it carries helps to keep the road free of snow and ice. By now the water has been cooled to near freezing point, and it is once again sent underground—this time through a different pipe, to a second aquifer. Here, another set of heat exchangers is used to cool the groundwater. This store of cold water is then used in summer to keep the Ooms building cool.

The result is cheap heating in winter and cheap cooling in summer. And there is a bonus. Summer heating softens asphalt, making it easier for heavy traffic to damage the road surface. Dr de Bondt's system not only saves electricity, but also saves the road. Expect to see more examples of it, in other countries, soon.

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Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Playing tag

Dec 6th 2007
From The Economist print edition

Mobile technology: Crossing mobile phones with social-networking sites would help people find friends, and potential friends, nearby

IMAGINE you are a woman at a party who spots a good-looking fellow standing alone in a corner. Before working up the courage to talk to him, you whip out your mobile phone. A few clicks reveal his age and profession, links to his latest blog posts and a plethora of other personal information. To many, this sounds like a nightmare. But to those building so-called “mobile” social networks, it is nirvana: linking virtual communities such as Facebook or MySpace with the real world. The idea is not new, but so far such services have not gained much traction. They have to be able to pinpoint people in order to work, but satellite positioning does not work indoors. More importantly, it is hard for such a service to gain critical mass: why join, if it does not already have many users?

A new generation of mobile social networks may have found ways to overcome these barriers. One is Aka-Aki, a start-up based in Berlin. Users of its service download a small program onto their mobile phone. The software then uses Bluetooth, the short-range radio technology built into many mobile phones, to check whether any friends or other members with similar interests are within 20 metres. If so, the program pulls down the person's picture and whatever information he or she is willing to reveal from the firm's website.

This works because each Bluetooth radio chip has a unique identifying code that can be used to look up a person's information. To overcome the chicken-and-egg problem, Aka-Aki has made its software work on most phones and offers what amounts to free text-messaging between members in order to encourage take-up. In addition, Aka-Aki is also a web-based social network with a twist: to express their interests, members can create virtual stickers and share them with others, which then makes mobile matching easier.

Aka-Aki is still testing its service, which currently has only about a thousand members. How it will make money is unclear. But it does not take much imagination to see how the Aka-Aki approach could lend itself to advertising. Billboards or shops, for instance, could in effect become members of the network, and beam special offers or messages to other members as they pass by. (Already, Facebook's advertising model allows companies to set up profiles for their products, which can then become “friends” with other members.)

If mobile social networks do take off, they are likely to do so first in Europe, rather than tech-happy California or mobile-crazy Japan. This is, perhaps surprisingly, thanks to regulators. European operators are required to keep mobile phones more open to software downloads, with the result that they can run programs such as Aka-Aki's. (Google is pushing for more open handsets based on its new Android platform, but the first phones will not appear until the second half of 2008.) Many mobile phones in Europe also come with Bluetooth, because drivers there need it for their wireless headsets: talking directly on a mobile phone while driving will earn you a hefty fine in most countries.

Then again, Europe's predilection for privacy could still emerge as a big barrier. Aka-Aki, for instance, has so far refrained from adding one feature that might cause quite a stir: the unique Bluetooth identifier could also be used to tag people, for instance, with unflattering comments. This would even work with non-members, as long as their handsets had Bluetooth switched on. Those wanting to remain incognito in this brave new world might soon have to turn off their mobile phones when arriving at a party.

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Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

The small print

Dec 6th 2007
From The Economist print edition

Nanotechnology: A novel technique borrows from screen printing to provide a way to build tiny devices using miniature stencils

Illustration by Robin Chavalier

THE field of nanotechnology—making widgets just a few billionths of a metre across—has been slow to take off. One reason for the delay is the difficulty of assembling useful devices from such tiny building blocks. Tobias Kraus, of IBM's Research Laboratories in Zurich, Switzerland, and his colleagues have come up with a new way to print such structures which could help. It is based on screen printing, which uses a stencil and paint to create an image. Existing ways of printing devices at the nanoscale tend to be complex and expensive, and more appropriate for making silicon chips. By contrast, the new technique is easy and cheap.

The researchers first made a patterned template containing holes that were just tens of nanometres deep. They then coated the template with ink made of flecks of gold just 60 nanometres in diameter suspended in an aqueous solution. The ink was kept deliberately thin and exposed to air at a precisely controlled temperature, which concentrated the gold particles at the curved upper surface of the fluid. As the liquid evaporated, the ink became richer in gold, the fluid flowed over the holes, and a single nanoparticle of gold dropped into each one.

The second stage was to transfer the gold from the stencil to a screen, or substrate, by pressing the template onto it. For this transfer to take place successfully, the materials have to be chosen so that the ink is more attracted to the substrate than it is to the stencil. If so, individual nanoparticles of ink will be precisely dotted over the solid surface.

The researchers used their technique to create an image of the sun inspired by the drawings of Robert Fludd, a 17th-century alchemist (the sun is the alchemists' symbol for gold). They used 20,000 particles of gold, each measuring just 60 nanometres across. Dr Kraus thinks their technique could be used to print biosensitive nanoparticles (which are often produced as liquids) onto solid surfaces to make biosensors for use in medical tests. The work was described in the September 2nd issue of *Nature Nanotechnology*.

Although Dr Kraus has yet to match the accomplishments of his colleague Don Eigler, who used a scanning-tunnelling microscope to manipulate 35 xenon atoms to spell out “IBM” in 1989, his technique may ultimately prove more useful. Despite being just 60 nanometres across, each of his dots contains millions of atoms of gold. At such small scales, the behaviour of particles varies greatly according to their size. It may well be that a bigger blob has more useful properties than a smaller one. Ironically, at the nanoscale, bigger may prove to be better.

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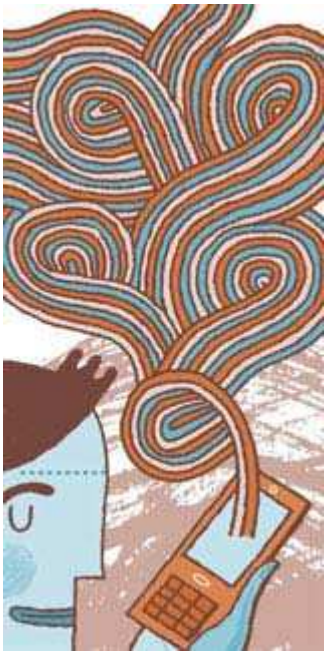
Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Crystal clear

Dec 6th 2007
From The Economist print edition

Materials: Photonic crystals embedded in a sponge can be used to make electronic paper capable of displaying images in colour

Illustration by Robin Chavalier



SOME new technologies appear from nowhere. Others are heralded by such long fanfares that it seems they will never arrive. Electronic paper is surely in the second category. The idea of a digital display that has the clarity and flexibility of paper has been around for at least a decade. It has found a few niche, black-and-white applications in mobile phones and "electronic books" such as Sony's Reader and Amazon's Kindle. As a mass-market, full-colour product, however, it has conspicuously failed to show up.

Nil desperandum. Sooner or later someone will create the winning formula. The latest effort, by a Canadian firm called Opalux, uses objects called photonic crystals to produce electronic paper with bright, sharp colours. Previous attempts to make electronic paper colourful have used the traditional approach employed in liquid-crystal screens and cathode-ray tubes. This relies on picture elements, or pixels, with three subunits, each responsible for one of the primary colours. Varying the intensity of these primaries creates the illusion, from a distance, of the intended hue.

Doing things this way, however, exacts two prices: brightness and resolution. With only one-third of the screen occupied by each primary, two-thirds of the potential output is wasted. For the same reason, the illuminated parts of the pixels are smaller and further apart than they could be, so the image is fuzzier. What is needed is a pixel that can change colour entirely. That is what photonic crystals allow.

The defining characteristic of a crystal—any crystal—is that it is composed of regularly arranged components. In familiar crystals, such as salt, sugar and diamonds, these elements are atoms or molecules. But the elements of a crystal can be larger than that, as long as they are regular.

In a photonic crystal the elements are about the same size as the wavelength of light—a few hundred nanometres (billionths of a metre). But for the crystal to do its job, those elements must also be electrical insulators. That is because light is a form of electromagnetic radiation—in other words, a wave in which electric and magnetic fields continuously leapfrog each other. Being insulators, the elements of a photonic crystal constrain this propagation, permitting some wavelengths to pass while denying passage to others, which are thus reflected. The result, since wavelength determines colour, is that photonic crystals reflect coloured light.

Exactly what colour is reflected depends on the spacing between the elements. Alter the spacing and you alter the colour. And that is how Opalux's product, dubbed P-Ink, works. In P-Ink, the elements of the crystals are tiny beads of silica, 200 nanometres in diameter. These are embedded in a spongy "electroactive" polymer. A pixel is built by sandwiching a layer of P-Ink, along with a small amount of electrolytic fluid, between two transparent electrodes. The pixels are then built into displays by embedding them and their electrical connections in a sheet of another polymer, this time a transparent and flexible one.

By applying a voltage across the electrodes of a pixel, the polymer can be made to absorb or expel some of the electrolyte and thus expand or contract. That alters the spacing between the elements of the crystal. The whole pixel can thus be tuned to reflect any desired colour.

That alone would make Opalux's technology worth considering for displays in general. But the third characteristic required of electronic paper, besides high resolution and flexibility, is that the image should remain fixed when the power is switched off—and that, too, is the case for P-Ink. Once in the polymer, the electrolyte stays there until a newly applied voltage coaxes it out.

One thing that may hold P-Ink back, however, is what is known as the refresh rate. This is the speed at which a pixel can change colour. For video, that needs to happen at least 25 times a second if the eye is to be fooled into seeing continuous motion. The refresh rate for P-Ink at the moment is only about once a second, so the heralds of electronic paper are not quite ready to put their trumpets to their lips. But Opalux's scientists are working on it. If they can speed things up, expect another fanfare soon.

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Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Hafnium and chips

Dec 6th 2007
From The Economist print edition

Semiconductors: A new recipe involving a hitherto obscure element is the latest way to make microprocessors even faster

Illustration by Robin Chavalier

ONE consequence of the growth of microelectronics has been an exploration of the periodic table reminiscent of European navigators' search for the spice islands half a millennium ago. Then, as now, the objective was material of great rarity and value, which was needed in only small quantities but which did jobs that nothing else could manage. In the case of spices, such as nutmeg, cloves and mace, this job was to enhance the taste of food and demonstrate wealth and sophistication. They were so valuable that wars were fought to control their supply in some cases.

In the case of indium, gallium and tantalum it is their unique electrical properties that are of interest. Indium-tin oxide, for example, is both transparent and electrically conductive. Without it, liquid-crystal display screens would be much harder to make. Meanwhile tantalum (used as an insulator in mobile-phone chips) once became so valuable that it, too, helped drive a war—the civil war in eastern Congo, where its ore has been dusted over the countryside like icing sugar by ancient volcanic eruptions.

The latest element to be dragged out of obscurity by the chemist-descendants of Prince Henry the Navigator is hafnium. This metal (or, rather, its oxide) is the magic ingredient that computer-chip designers hope will enable them to carry on shrinking the transistors inside their products in accordance with Gordon Moore's famous law that the number of such transistors on a given area of chip doubles every 18 months or so. Indeed, it is the most significant change of recipe since Dr Moore and his colleagues invented the microprocessor back in the 1960s. Intel, the firm that Dr Moore helped to found on the back of the invention, introduced its new hafnium-based chip, called Penryn, on November 12th. Its competitors are expected to follow suit as soon as they can.

At bottom, transistors are electronic valves that use a small voltage at a place called a gate to regulate the flow of current through the rest of the device. This switching of current is what produces the zeros and ones of binary arithmetic, and is the basic process of computing. Gates, which are made of silicon, must be electrically isolated. Until now, that has been done using silicon dioxide—in other words, quartz. The insulating layer is made by exposing the silicon of the gates to pure oxygen, which is a well-honed manufacturing process.

As transistors have got smaller, though, the silicon-dioxide layer has been made thinner and thinner. It is now a mere five atoms thick, which is already too thin to be a perfect insulator. As a result, modern transistors have to accommodate some current leakage. This has been regarded as a price worth paying to avoid having to reorganise the manufacturing process to accommodate new materials. Any thinner, however, and the insulation would break down altogether.

Researchers at Intel and elsewhere have seen this problem coming for some time. In the late 1990s they started to look for a material that could serve as silicon dioxide's replacement. They rejected oxides of aluminium (which is abundant) and lanthanum (which isn't) and eventually lighted upon hafnium. Hafnium oxide is a very good insulator indeed. Unfortunately, using it requires completely rebuilding the gate, by including a metal connection between the insulator and the underlying silicon. (Exactly which metal, all of the companies involved are being cagey about.) This is a lot harder than just baking the chip in oxygen at the appropriate point in its manufacture, which is why engineers have held out until the last possible moment before making the change.

The new combination of materials is, however, just what Dr Moore ordered. Penryn chips have twice as many transistors as their predecessors (about a billion). Just as important, they waste only one-fifth the

amount of power in the gate. With luck, though, unlike spices or tantalum, the quantities needed for microelectronics will not be worth fighting over.

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Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Don't invent, evolve

Dec 6th 2007
From The Economist print edition

Innovation: The inventor's traditional trial-and-error approach can be automated by software that mimics natural selection

“I HAVE not failed. I have just found 10,000 ways that won't work.” That is how Thomas Edison described his laborious attempts to perfect the incandescent light bulb. Yet an emerging technique for developing inventions knocks even Edison's exhaustive approach into a cocked hat. Evolutionary design, as it is known, enables a computer to run through tens of millions of variations on an invention until it hits on the best solution to a problem.

As its name suggests, evolutionary design borrows its ideas from biology. It takes a basic blueprint and mutates it. As in biology, most mutations are worse than the original. But a few are better, and these are used to create the next generation. Evolutionary design uses a computer program called an evolutionary algorithm, which takes the initial parameters of the design (things such as lengths, areas, volumes, currents and voltages) and treats each like one gene in an organism. Collectively, these genes comprise the product's genome. By randomly mutating these genes and then breeding them with other, similarly mutated genomes, new offspring designs are created. These are subjected to simulated use by a second program. If one particular offspring is shown not to be up to the task, it is discarded. If it is promising, it is selectively bred with other fit offspring to see if the results, when subject to further mutation, can do even better.

The idea of evolutionary algorithms is not new. Until recently, however, their use has been confined to projects such as refining the aerodynamic profiles of car bodies, aircraft fuselages and wings. That is because only large firms have been able to afford the supercomputers needed to mutate and crossbreed large virtual genomes—and then simulate the behaviour of their offspring—for perhaps 20m generations before the perfect design emerges. What has changed, in this field as in so many others, is the availability and cheapness of computing power. According to John Koza of Stanford University, who is one of the pioneers of the field, evolutionary designs that would have taken many months to run on PCs are now feasible in days.

As a result, the range of products to which evolutionary-design principles are being applied is growing. Among those revealed at the Genetic and Evolutionary Computation Conference held in London this summer were long-life USB memory sticks, superfast racing-yacht keels, ultra-high bandwidth optical fibres, improved cochlear implants and a cancer-biopsy analyser that matches a human pathologist's tumour-spotting skills.

How can evolution help improve a USB stick? It turns out that transistors in these flash-memory devices are prone to being gummed up with electrostatic charge that they cannot dissipate. That prevents data from being erased, limiting the stick's life. So a team at the University of Limerick in Ireland evolved new signal-timing patterns that minimise the build-up of the disabling charge. The result: USB sticks that last up to 30 times longer than their predecessors.

At the University of Sydney, in Australia, Steve Manos used an evolutionary algorithm to come up with novel patterns in a type of optical fibre that has air holes shot through its length. Normally, these holes are arranged in a hexagonal pattern, but the algorithm generated a bizarre flower-like pattern of holes that no human would have thought of trying. It doubled the fibre's bandwidth.

Meanwhile, Pierrick Legrand of the University of Bordeaux has used the method to optimise cochlear implants, which help people to hear better. One of the hardest tasks facing those who fit these devices is working out the precise choreography of the voltages and timings that need to be applied to the 20 or so electrodes embedded in the auditory nerve, in order to make them work properly. The signals required vary from patient to patient and some people wait many years before an audiologist gets it right. Dr Legrand, however, has developed an evolution-based system that co-evolves several channels at a time, allowing a patient to tell his doctor how each pattern of electrode stimulation is faring. Dr Legrand says that one patient, who had experienced a decade of trouble with his implant, had it fixed in a couple of days using the evolutionary method.

Perhaps the most cunning use of an evolutionary algorithm, though, is by Dr Koza himself. His team at Stanford developed a Wi-Fi antenna for a client who did not want to pay a patent-licence fee to Cisco Systems. The team fed the algorithm as much data as they could from the Cisco patent and told the software to design around it. It succeeded in doing so. The result is a design that does not infringe Cisco's patent—and is more efficient to boot. A century and a half after Darwin suggested natural selection as the mechanism of evolution, engineers have proved him right once again.

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Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

And the winners are...

Dec 6th 2007
From The Economist print edition

Innovation personified

Innovation awards: Our annual prizes recognise successful innovators in eight categories. Here are this year's winners

THIS newspaper was established in 1843 to take part in “a severe contest between intelligence, which presses forward, and an unworthy, timid ignorance obstructing our progress”. One of the chief ways in which intelligence presses forward is through innovation, which is now recognised as one of the most important contributors to economic growth. Innovation, in turn, depends on the creative individuals who dream up new ideas and turn them into reality.

The Economist recognises these talented people through its annual Innovation Awards, presented in eight fields: bioscience, computing and communications, energy and environment, social and economic innovation, business-process innovation, consumer products, a flexible “no boundaries” category, and an award for the corporate use of innovation. The awards were presented at a ceremony in London on October 18th by John Micklethwait, *The Economist*'s editor-in-chief. And the winners were:

• Bioscience: **Hermes Chan** of MedMira and **Abdullah Kirumira** of BioMedica Diagnostics for the development of **fast HIV diagnostic testing**. It is estimated that one-third of people tested for HIV do not return for the results. Dr Chan and Dr Kirumira developed a test that produces a result in three minutes, rather than days or weeks. Both men are now developing tests for other diseases.

• Computing and communications: **Mike Lazaridis**, founder of Research in Motion, for the development of the **BlackBerry mobile e-mail device**. Mr Lazaridis had the original idea for the BlackBerry in his basement, and the first device, with its distinctive miniature keyboard, launched in 1999. There are now over 11m BlackBerry devices in use around the world.

• Energy and environment: **George Craford** of Philips Lumileds and **Roland Haitz** of Hewlett-Packard for the development of **light-emitting diodes** (LEDs) for use in new areas. Dr Craford and Dr Haitz have helped to move LEDs, which are far more energy efficient than conventional bulbs, into new markets such as traffic lights and domestic illumination.

• Social and economic innovation: **Mo Ibrahim**, founder of CelTel, for the promotion of **mobile phones in Africa**. Founded in 1998, CelTel grew to become Africa's second-largest mobile operator and was sold in 2005 to MTC of Kuwait for $3.4 billion. As well as boosting economic activity via mobile phones, CelTel showed that it is possible to build a multi-billion dollar African company in an industry other than oil or mining.

• Business-process innovation: **N.R. Narayana Murthy**, co-founder of Infosys, for pioneering **India's information-technology services** industry. Under Mr Narayana Murthy's leadership, Infosys developed the idea of providing computing services from India to clients around the world, often at much lower

cost, paving the way for a $40 billion industry.

• Consumer products: **Shigeru Miyamoto** of Nintendo for his leading role in shaping **the video-game industry**. From the creation of “Donkey Kong” in 1981 to the establishment of the “Mario” and “Zelda” franchises in the 1980s and the current success of DS hand-held and Wii motion-sensing games consoles, Mr Miyamoto helped to bring into being, and then redefined, a new industry.

• No boundaries: **Stuart Parkin**, **Peter Grünberg** and **Albert Fert** for the discovery and development of the **giant-magnetoresistive (GMR) effect**. Discovered independently by Dr Grünberg and Dr Fert in 1988, the GMR effect was subsequently developed for commercial use by Dr Parkin of IBM. By increasing the sensitivity of the sensors used to read data for magnetic disks, the GMR effect boosted hard-disk capacity, cutting the cost of storage and eventually making possible the first iPod.

• Corporate use of innovation: **Procter & Gamble**, for its pioneering use of the **open-innovation model** in its “Connect + Develop” programme to find ideas for new products outside the company.

We extend our congratulations to the winners, and our thanks to the judges: Robin Bew, editorial director, the Economist Intelligence Unit; Jordi Canals, dean and professor of economics, IESE Business School; Marvin H. Caruthers, professor of chemistry and biochemistry, University of Colorado; Martin Cooper, chairman and chief executive, ArrayComm; Rodney Ferguson, managing director, Panorama Capital; Janus Friis, co-founder, Skype; Lisa Gansky, director, Dos Margaritas, co-founder, Ofoto; François Grey, head of IT communications, CERN; Georges Haour, professor of technology and innovation management, IMD; Vic Hayes, former chair, IEEE 802.11 working group; Paul Jackson, principal analyst, Forrester Research; Yoichiro Matsumoto, professor and dean of engineering, University of Tokyo; Edward McBride, energy and environment correspondent, *The Economist*; Louis Monier, research scientist, Google; Andrew Odlyzko, professor of mathematics and director, Digital Technology Centre, University of Minnesota; Jagdish Parikh, chairman, Allied Lemuir; Andrea Pfeifer, chief executive, AC Immune; Sam Pitroda, chairman, National Knowledge Commission, India; Navi Radjou, vice-president, enterprise applications, Forrester Research; Rinaldo Rinolfi, executive vice-president, Fiat Research; Paul Romer, professor of economics, Graduate School of Business, Stanford University; Paul Saffo, director, Institute for the Future; Jerry Simmons, deputy director for energy sciences at the Centre for Physical, Chemical, and Nano-Sciences, Sandia National Laboratories; Hernando de Soto, chairman, Institute for Liberty and Democracy; Tom Standage, business editor and *Technology Quarterly* editor, *The Economist*; Vijay Vaitheeswaran, health-care correspondent, *The Economist*. The judging process was managed by Charles Pelton of Modern Media.

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Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Reality, only better

Dec 6th 2007
From The Economist print edition

Computing: Superimposing computer graphics on the real world, instead of displaying them on screens, has many potential uses

FIRST, catch your cockroach. The clinical psychology department at Universitat Jaume I in Castelló, Spain, paid its cleaners to capture live specimens. A team of computer-imaging specialists filmed the creatures, digitised images of their scurrying and teeming, and displayed the images—not on a computer monitor, but on see-through goggles. To the wearer, the virtual roaches then look as though they are really in the room. Next, university psychologists set about therapeutically frightening patients who have a fear of insects. “They put a foot on the ground and the cockroaches start climbing over it,” says Cristina Botella, who led the researchers. “The computer just pumps them out.” In November Ms Botella presented her team's findings at the Association for Behavioural and Cognitive Therapies conference in Philadelphia. The treatment worked very well.

For some things, it turns out, computer graphics can be much more effective when viewed not on screens, but superimposed on the real world. The technique is known as “augmented reality” (AR) or, less frequently, as “augmented vision”, because the real world is augmented with virtual text or graphics. Much AR technology remains in labs, but research funding in both the private and public sectors is increasing, and all kinds of eclectic and ingenious applications are emerging in fields as diverse as medicine, warfare, manufacturing and entertainment.

Consider the task of locating veins, a crucial step in procedures such as inserting intravenous drips, injecting medicines and drawing blood. Last year Luminetx, a medical-equipment firm in Memphis, Tennessee, began selling an AR machine called the VeinViewer. It shines near-infra-red light at the patient's skin, and because blood vessels absorb such light, a digital video camera that captures the reflected light can work out the precise location of veins to a depth of almost 1cm. A projector then shines a map of the vein network directly on the skin. The process takes place in real time, so the luminous map changes as the patient moves. “It's like Superman vision—you can see under the skin,” says Kasuo Miyake of Clínica Miyake, a clinic that performs vein-related procedures in São Paulo, Brazil. Dr Miyake says his VeinViewer boosted referrals by 20%, cut costs by 30% and reduced the need for anaesthesia.

AR can also be used in surgery. A big benefit is that surgeons do not need to keep looking up and down, switching their gaze between the patient and displays on nearby equipment; instead, the information can be directly overlaid, in effect giving the surgeon X-ray vision and other superhuman powers. Even so, there are very few AR operating rooms, says Henry Fuchs, an expert in AR medicine at the University of North Carolina at Chapel Hill. Dr Fuchs says that although early (and sparse) evidence suggests that AR surgery is more accurate, uptake is slow for several reasons. The equipment is expensive, training is time-consuming and involves ditching some skills surgeons have worked hard to attain, and new surgical techniques are more vulnerable to malpractice lawsuits.

Augmented enjoyment

The technology also has less serious uses, however. YDreams, a marketing and digital-media firm in Lisbon, Portugal, has developed an AR sightseeing viewer called VSS. The first such machine, bolted atop a battlement on the 12th-century Pinhel Castle in north-eastern Portugal, delights tourists who tilt it up, down and around for an augmented view of the castle and its surroundings. Place names and explanatory text are superimposed over objects seen through the viewer's screen, and animated graphics show how some structures were built or destroyed. The number of visitors has doubled since the viewer was installed in July 2006, says Isabel Almeida, who manages the castle.

In France the Parc du Futuroscope, an amusement park near Poitiers, is building a €7m ($10m) safari attraction that will be devoid of animals. Instead, passengers riding on a small train will look through hand-held AR binoculars that will superimpose frolicking 3-D virtual animals over the real decor. “It's pretty close to being a magic show,” says Bruno Uzzan, the boss of Total Immersion, the company that is developing the attraction. Video games would also seem a perfect fit for AR technology, and many game studios are investing in development. But very little AR gaming technology has hit the market. Gamers demand extremely fast and rich graphics, and so far the hardware is too expensive to make AR a mass-market proposition. If the future is any guide, however, prices will fall once AR is adopted by more serious users—such as the armed forces.

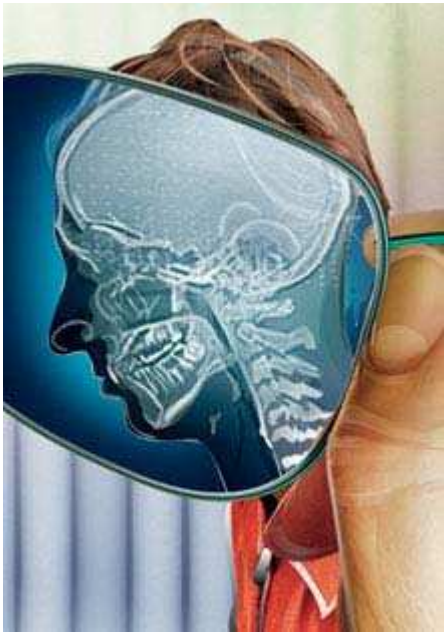
“Head-mounted displays could show soldiers the locations of friendly forces, as in a video game.”

Virtual reality has proved to be immensely useful in military training. But virtual worlds—those created entirely by computer, and viewed on screens—cannot be used to improve live-fire training, long a priority of America's Marine Corps, says Bob Armstrong, until recently deputy director of the Marine Corps' Training and Education Technology Division. “We end up shooting at piles of tyres or old vehicles,” he says. “We wanted to inject a thinking, moving target into the live-fire environment.” His team, working closely with organisations including the Office of Naval Research and various defence contractors, managed to do just that using AR technology.

During battle, forward observers identify targets and direct artillery, mortar and aviation fire. With the Marine Corps training system, forward observers wear a head-mounted display with a see-through visor; objects displayed on the visor appear to be part of the real world. Mr Armstrong, now director of technology at the Virginia Modelling, Analysis and Simulation Centre at Old Dominion University in Norfolk, Virginia, says the Marine Corps' AR live-fire training system works exceptionally well. Instructors use tablet PCs to move the virtual targets while trainees shoot at them, and the virtual targets can even hide behind real terrain or buildings.

On the battlefield, AR could have an important role in disseminating tactical intelligence. Soldiers with head-mounted displays might, for example, read street names superimposed on the ground, follow colour-coded arrows for patrols or retreats, and see symbols indicating known or potential sniper nests, weapons caches and hiding places for booby-traps. The displays could also show the locations of friendly forces and levels of ammunition and other supplies, as in a video game.

Mark Livingston, head AR researcher at the Naval Research Laboratory in Washington, DC, says his team is developing “3-D ink” writing methods that will allow soldiers to paint virtual symbols or text onto the real world, so that other soldiers who arrive at the same spot later can see them. He remarks, only half jokingly, that young soldiers who are used to video games are better equipped to handle this visual “information overload”.



Augmenting productivity

Industrial engineers call them discrepancies, deviations, clashes or conflicts. Variations between a structure's digital architectural models—the virtual renderings produced by computer-assisted design (CAD) software—and the structure itself are common. Finding and mapping them is important, because accurate CAD models are needed to operate, maintain, repair and insure buildings. And some discrepancies require rebuilding, so the sooner they are found the better. But current checking methods, generally involving laser scanning, are expensive and require lengthy set-up. A new method, using AR, is on the way.

Siemens, working with the Technical University of Munich, has prototyped AR discrepancy-checking software for industrial plants. Engineers superimpose the original CAD models over actual buildings to determine which bits of the model need to be updated, or which parts of the building need to be rebuilt. The process is less complicated than laser scanning, so discrepancy checks can be more frequent, making rebuilding less expensive. Mirko Appel, an engineer and senior project manager at Siemens, estimates that the software will reduce the cost of constructing a typical medium-sized coal-fired power plant by more than $1m. Areva, a French nuclear giant, used the system to check a European plant for discrepancies in September. And OMV, an Austrian energy company, has tested a similar system developed by the Upper Austria University of Applied Sciences.

Volkswagen (VW) uses AR discrepancy-checking software to verify the conformity of components supplied by subcontractors. Christoph Kohnen, a spokesman, says the technique is “tremendously faster and cheaper” than previous measuring methods. The carmaker, which has teamed up with Kuka, a robot-maker, to improve the system, is introducing the technology in some 40 factories worldwide. And it has devised other uses for AR. To study crash tests, VW superimposes an image of an intact car over the wreckage of a crashed vehicle. To speed up prototype construction, it uses AR to superimpose luminous instructions directly on the tools and prototype components in front of workers. AR can also help to design production lines. Metaio, an AR developer based in Munich, does brisk business applying AR to “interfering-edge analysis”. Its systems move virtual models of prototype machinery and products around manufacturing plants to determine how existing equipment would have to be moved or modified.

AR is still an immature field compared with virtual reality, which has now entered the mainstream in the form of video games, online virtual worlds and computer-animated films and special effects. The additional technologies required to take virtual images and integrate them into the real world still have a long way to go: most AR technology is still expensive, fragile and unwieldy, though researchers are doing their best to change that. But given a few more years, it is not hard to imagine where all this might lead: imagine satellite-navigation systems that appear to paint the road yellow to show a driver which way to go, mirrors that let you try on different outfits or haircuts, or glasses that turn the whole world into a backdrop for a video game. Why settle for reality when you can augment it?

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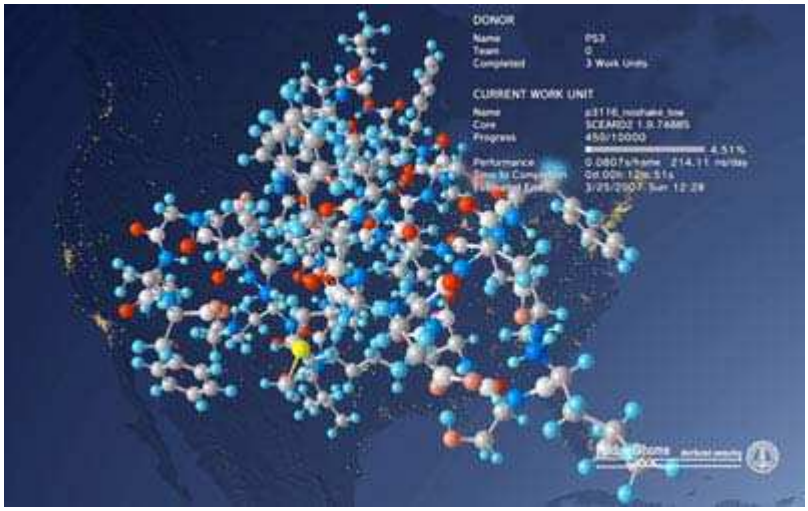
Spreading the load

Dec 6th 2007
From The Economist print edition

Folding@home project



Computing: A new wave of science projects on the web is harnessing volunteers' computers in novel ways—and their brains, too

WAY back in 1999, a badge of geek pride was to run a new screensaver program called SETI@home. This used spare processing capacity on ordinary PCs to sift through radio-telescope data for signs of extraterrestrial intelligence. The bad news is that so far, not a peep has been heard from any little green men. The good news is that SETI@home is still going strong, with over 3m contributors, and is being joined by a rapidly growing legion of other volunteer computing projects supporting worthy scientific causes.

The choice is bewildering. Your PC can help design drugs against AIDS, model the future climate of the planet, search for new prime numbers or simulate micro-devices for handling satellite propellant, to cite just a few examples. Part of the boom in volunteer computing is due to an open-source platform for running such projects, called BOINC (Berkeley Open Infrastructure for Network Computing), launched in 2002 by David Anderson, the director of SETI@home. Today over 40 BOINC projects are in operation, with 15 in the life sciences alone. IBM, which runs a philanthropic initiative called World Community Grid and has signed up over 800,000 volunteer computers, is switching all the humanitarian projects that it supports to run on BOINC. These include Help Conquer Cancer, Discovering Dengue Drugs and AfricanClimate@home, which the computer giant runs on behalf of university research groups that need lots of computer power for their research.

But numbers are not all that matters. BOINC also makes it easier for anyone with a research idea to gain access to distributed-computing power. Two years ago, at the age of 18, Rytis Slatkevicius launched a project called PrimeGrid, which has since assembled possibly the largest database of prime numbers in the world, and has broken several records: last August, for example, it found the biggest known example of a special kind of prime number called a Woodall prime. In his native Lithuania, Mr Slatkevicius is a soft-spoken business student by day, but in the evenings he manages servers for his project, eking out enough to cover his costs from Google Ads, sales of mugs and T-shirts, and donations from supporters.

Another development that is boosting volunteer computing is the use of devices other than PCs, in particular games consoles and the powerful processors they contain (see article). This has been demonstrated most spectacularly by a project called Folding@home, run by Vijay Pande and his team at Stanford University, which simulates protein folding and mis-folding—a cause of diseases such as Alzheimer's. In September the combined computing capacity of the project passed one petaflop—a quadrillion mathematical operations per second—something supercomputer designers have dreamed of for several years. With just over 40,000 PlayStation 3 volunteers, Folding@home entered the record books as the most powerful distributed-computing network on Earth.

Along with a rapid increase in the number and diversity of research projects to which they contribute, there has been a marked improvement in the software that binds the volunteers together into groups. They can share information and opinions about the science behind the projects they are supporting, and perhaps make new friends in the process. Matt Blumberg, a BOINC expert based in New York, has made a click-and-play portal called GridRepublic for a host of projects, to encourage more non-techies to get involved. BOINC even has a volunteer help desk where experienced users can advise newcomers via Skype, a free internet-telephony service.

As well as collaboration, there is also a strong element of competition among computing volunteers. Like online gamers, they can compete individually or in teams to rack up the most processing time for a given project. Some enthusiasts fill their garages with PCs just to get a shot at being user of the week. And a new generation of projects takes the concept of volunteer computing to a higher level of user interaction by allowing volunteers to get involved in analysing data—in effect, donating spare brain capacity, too.

“Volunteer computing is a huge untapped resource, not just a clever publicity stunt.”

Take, for example, the Galaxy Zoo project, where volunteers have been helping astronomers to classify the shapes of galaxies from images taken by the Sloan Digital Sky Survey, an international collaboration which is mapping a large section of the visible universe in unprecedented digital detail. Thanks to the exquisite pattern-recognition capabilities of the human brain, amateurs with just a little training can distinguish between different types of galaxy far more efficiently than computers can. The project started in July to little fanfare, but news of it spread rapidly on the web, and more than 100,000 volunteers classified over 1m galaxies in a few months—a task which would have taken a lone astronomer years of unbearably tedious effort. Galaxies are traditionally divided into spiral and elliptical categories, but how one evolves into the other remains controversial. Better statistics might help to shed light on the nature of galactic evolution.

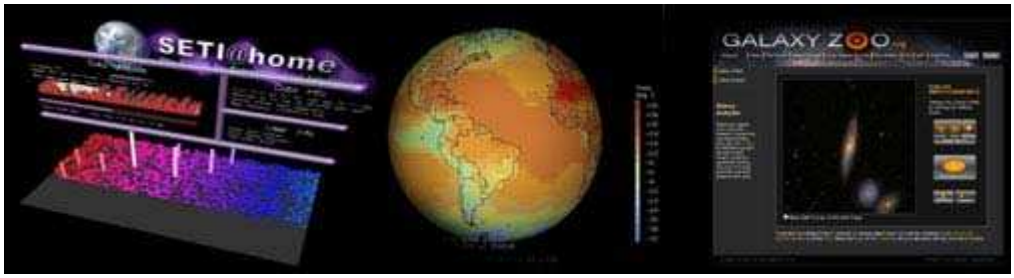
The researchers behind Galaxy Zoo, a collaboration between research groups at Oxford University and Portsmouth University in Britain, and Johns Hopkins University in America, are already writing up the first papers based on the galaxies classified so far. They have also submitted requests for viewing time on big telescopes in order to follow up on some of the more unusual discoveries made by volunteers. Plans are in the works for a second phase requiring more detailed analysis and drawing on other image banks too.

Citizen science meets Moore's law

Of course, there is nothing new about networks of amateurs helping scientists do their jobs. Ornithologists rely on bird-watchers to keep track of changing patterns of migration, astronomers have long profited from enthusiasts scanning the skies to spot new comets, and archaeologists benefit from amateurs' finds. But the potential for such citizen science is expanding rapidly because of Moore's law—the doubling of processor power every 18 months or so—and a similarly speedy growth of the bandwidth available to ordinary internet users. People with no special tools other than a PC and a broadband internet connection can take part in complex scientific projects from the comfort of their own homes.

The easiest part is getting the public involved. Most volunteer-computing projects can draw on tens of thousands of people with practically no advertising, relying on word of mouth. The problem is usually keeping these eager amateurs busy. The Galaxy Zoo project was initially overwhelmed by the public response, and had to upgrade its servers and computer network to cope with the demand for images, which reached peaks of 70,000 per hour. Chris Lintott of Oxford University, lead researcher on the project, says he was thrilled by the public's reaction. “We've had complaints that the site is addictive, as you never quite know what the next image is going to reveal,” he says.

Then there is the question of ensuring that what the volunteers do is scientifically valid. Most of the projects, whether powered by processors or by brains, rely on independent validation of a result by several volunteers. In the case of Galaxy Zoo, for example, each image was viewed by over 30 volunteers, who proved just as accurate as checking by a professional astronomer. Indeed, scientists often find the tables are turned, with some of the more technically minded volunteers spotting bugs in their computer programs and even helping to fix them.



Searching for aliens with SETI@home; modelling the climate with climateprediction.net; sorting galaxies with Galaxy Zoo

Perhaps the biggest hurdle, though, is getting fellow scientists to accept that volunteer computing is a huge—and still largely untapped—resource, not just a clever publicity stunt. When Andrew Westphal of the University of California at Berkeley first talked to colleagues about using volunteer computing to spot the tell-tale tracks left by microscopic interstellar dust grains in tiles of porous aerogel, he met with considerable scepticism. Yet this was the problem facing him when a capsule returned to earth in 2006 from a probe called *Stardust*.

Starting in August 2006, the Stardust@home project enlisted some 24,000 volunteers to search images of the aerogel via a web-based “virtual microscope”. In less than a year they performed more than 40m searches and found 50 candidate dust particles, which scientists now plan to extract. When Dr Westphal presented the results at a conference in March, the impressive level of agreement for even the faintest tracks, each of which was spotted by several hundred independent volunteers, won over the sceptics.

Projects searching for cosmic dust or classifying galaxies clearly appeal to young cybernauts, but what of other, more mundane-sounding tasks? Fortunately the number of internet users is so large that some people, somewhere, are likely to find a particular volunteer project interesting. Getting enough volunteers to document plant specimens from the dusty 19th-century archives of British collections, for example, might seem like a hopeless task yet that is exactly what Herbaria@home is doing.

The project was launched last year by Tom Humphrey of the Manchester Museum, and already some 12,000 herbarium specimens have been documented by volunteers. This typically involves downloading an image of a specimen, deciphering the various comments that experts have written next to it in longhand, and entering this information in an organised fashion on a website. The project started with specimens from the Shrewsbury School herbarium, but has ambitious plans to expand to collections at universities and museums at home and abroad. Although this may not seem high-tech, the project relies on very high-resolution digital images, and ordinary internet users' ability to download and display them—something that would have been unfeasible just a few years ago.

Bossa nova

To lower the barrier to entry for projects like this, Dr Anderson recently launched a new open-source platform called BOSSA (Berkeley Open System for Skill Aggregation), which aims to do for “distributed thinking” what BOINC has done for distributed computing. One of Dr Anderson's first customers for BOSSA is Peter Amoako-Yirenkyi of the Kwame Nkrumah University of Science and Technology in Kumasi, Ghana, who is working with other African researchers and a research group called UNOSAT, which processes digital-satellite data for various United Nations agencies.

The project, which is part of an initiative called Africa@home co-ordinated by the University of Geneva, will enlist volunteers to extract useful cartographic information—the positions of roads, villages, fields and so on—from satellite images of regions in Africa where maps either do not exist or are hopelessly out of date. This will help regional planning authorities, aid workers and scientists documenting the effects of climate change. Dr Amoako-Yirenkyi is excited by the prospects such projects open up for African researchers. “We can leapfrog expensive data centres, and plug directly into a global computer,” he says. Rather than fretting about a digital divide, researchers in developing countries stand to benefit from this digital multiplication effect.

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Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Playing or processing?

Dec 6th 2007
From The Economist print edition

The distinction between gaming and useful processing is beginning to blur, for both people and machines

ESP turns image-labelling into a game

UNTIL recently there were only two ways to speed up a volunteer-computing project: persuade more people to take part, or wait for users to upgrade their PCs to faster models. But in October 2006 the creators of Folding@home, a popular volunteer-computing project run by Stanford University that analyses protein folding, gave its users another option. It released a version of its software designed to run not on a computer's central processing unit (CPU), but on the graphics chips (GPUs) found in modern PCs. The results were impressive. Precise comparisons are difficult, says Vijay Pande, Folding@home's director, but “a ten-fold speed increase is easy, a 50-fold one is possible, and you might even reach 100 if your application was particularly suitable.”

That is because GPUs are well suited to the types of calculations involved when simulating protein folding. Graphics chips make heavy use of so-called parallel processing, where a big task (such as rendering a scene from a video game) is broken into many smaller ones, each of which is worked on independently by a different part of the chip before being combined. Volunteer-computing projects, in which work must be broken up into stand-alone units to be sent out to participants, are another candidate for this approach.

The idea of using graphics chips for more general-purpose computing has been around for years, but only recently have the chips become sophisticated enough for it to work in practice. Both Nvidia and AMD, the world's largest graphics-card manufacturers, have decided that GPU computing could be a big opportunity. Nvidia has released a product line designed specifically for non-graphics applications, and a specialised programming language for use with it.

The next logical step for the Stanford team was to adapt their software for the hugely powerful Cell processor used in Sony's PlayStation 3 games console. This chip, developed jointly by Sony, Toshiba and IBM, also turns out to work well for the Stanford protein-folding program. With Sony solidly behind this project—even preloading Folding@home on to some PlayStations—adoption has taken off fast. Sony's motivation is not just philanthropic: for some young gamers, the fact that their machine will do serious science in its spare time is a useful argument to convince reluctant parents. Such is the power of the Cell chip that in less than a year the PlayStation has become the dominant source of processing power for the project, despite much larger numbers of contributing PCs.

Not all software will see the sort of dramatic speed-ups that Folding@home has achieved with these alternative processors, Dr Pande admits. Parallel processing is not suitable in all situations. If one calculation relies on the results of a previous one, then much of the chip will sit idle until that result is ready and the speed advantage will be lost.

Although Folding@home benefits parasitically from the gaming habits of young people, other projects are plugging into this passion in a more direct way, using players' brains to do things that even fast processors would find hard. One example is The ESP Game, created by Luis von Ahn of Carnegie Mellon University, in which two players on the internet try to label the same picture, and score points whenever they use the same word to describe it. Besides being addictive, the game serves a useful function: helping to index images on the web more accurately. Dr von Ahn and his team have generated several games to harvest “human computation”, as he calls it, some of which are just as captivating as The ESP Game.

Of course, it is also possible to use money to motivate people to do computing tasks, as in Amazon's Mechanical Turk project, which pays participants a few cents to complete simple tasks such as categorising websites for potential advertisers. But Dr von Ahn argues that play may be a more powerful incentive. People play billions of hours of solitaire each year, he says, but it took only 20m man-hours to build the Panama Canal.

Labelling images may be an enjoyable pastime and serve a useful purpose, but it is hardly an intellectual challenge—unlike the puzzles that online gamers regularly solve, often through team effort that requires strategic thinking. Clearly the potential of games to solve tough scientific problems has barely been tapped. The challenge is to create games that make solving such problems fun.

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Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Unmanned and dangerous

Dec 6th 2007
From The Economist print edition

RNLA

Aviation: Unmanned aerial vehicles are a vital tool of modern warfare. Once-harmless drones are now deadly attack aircraft. Where did the technology come from, and where is it going?

DUSK falls over Baghdad and Kabul, and the Predators take their places in the skies overhead, ready for action. Western soldiers prefer to fight in the dark, when their night-vision gear gives them the advantage over insurgents. They know that with drone aircraft scanning the ground, with unblinking eyes able to see by day or night and radars that can see through cloud, they “own the night”.

For the Predators' pilots, however, it is still bright daylight. Sitting in cramped metal containers in bases across America, they fly their machines by remote control from thousands of miles away, via satellite links. The video from the drones is gathered in a makeshift operations centre in the Nevada desert and distributed to leaders in the Pentagon and commanders on the ground. In the Predator operations centre, one screen monitors the weather around the Arabian Sea (Predators do not like rain or high winds), another shows the location of each aircraft on a map, and a third projects a mosaic of video images from each plane. One image shows a house under close observation in a palm grove in Iraq; another shows a road being scanned for hidden bombs. A laptop computer system known as Rover allows troops on the ground to watch the footage, and will soon let them mark out targets.

First flown in 1995, the Predator is a flimsy drone that flies as slowly as a Cessna and can carry far less weight. Yet it has become one of the most prized assets in today's wars in Iraq and Afghanistan. Initially a surveillance drone, the Predator was given a laser designator to enable it to guide precision-guided weapons from other aircraft, and then acquired its own weapons in the form of Hellfire missiles. It has thus shortened the process of finding, identifying and destroying a target—known in military jargon as the “kill chain” or the “sensor-to-shooter” cycle—to a matter of seconds if necessary. The 432nd Wing, which flies the Predators, is one of the fastest-growing units of the American air force. In 2006 it flew more than 50,000 hours, and fired Hellfires roughly every other day.

The Predator is far from being the only unmanned aerial vehicle (UAV) in use today, though it is probably the best known. The success of military UAVs is helping to push them into mainstream civil uses all over the world, in applications including border patrol, police surveillance, scientific research and disaster response. And there is a growing community of hobbyists who attach satellite-positioning units, cameras and other sensors to remote-controlled aircraft, turning them into UAVs.

Not everyone approves. Civil regulators are worried about unmanned aircraft sharing the sky with the usual manned variety, since UAVs have previously been limited to war zones or remote areas. And air forces may be reluctant to lose the mystique of the combat pilot. “There's going to be resistance,” says Colonel John Montgomery, vice-commander of the 432nd Wing. “When I first saw a briefing on the Predator three years ago, I saw one of my mission sets disappear. I miss the thrill of flying. But hanging

around for hours in a plane is a waste of manpower.”

Mad as a kite

Unmanned flying machines go back a long way. Kites were used in the late 19th century to carry cameras aloft to take pictures of battlefields. And even before the Wright brothers succeeded in building a heavier-than-air flying machine, the physicist and inventor Nikola Tesla speculated that it would be possible to build a remote-controlled flying bomb—a premonition perhaps of German V-1 flying bombs and modern cruise missiles. Yet aviation history is littered with the wrecks of unmanned-aircraft projects—some of them barmy, others simply too far ahead of their time—that were given a variety of names, including “aerial torpedo” and “remotely piloted vehicle”.

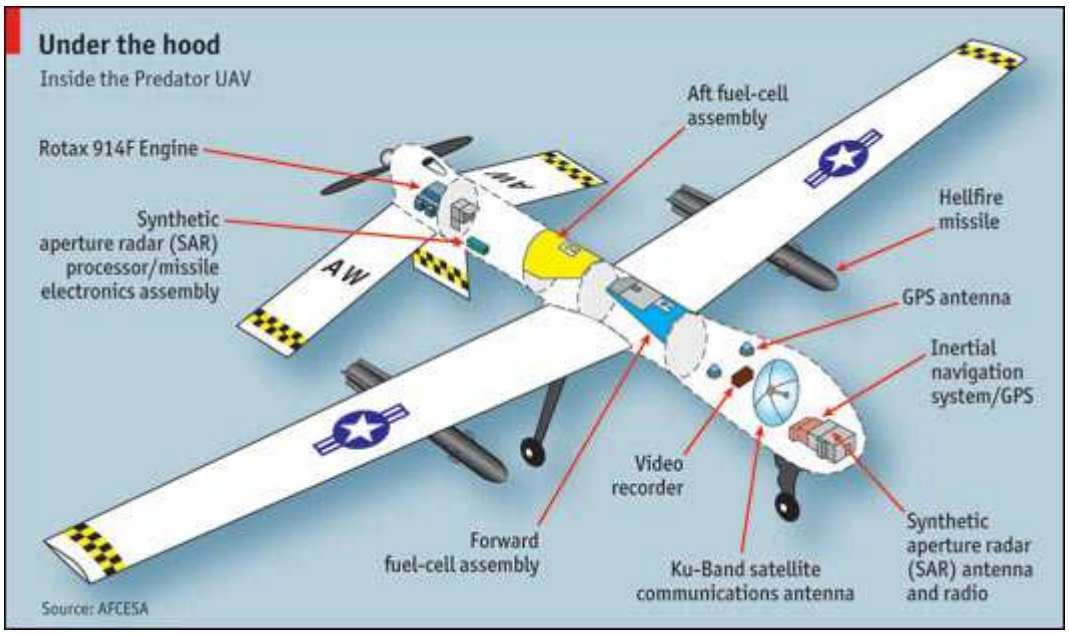
Occasionally UAVs found a valuable niche, for instance as targets for anti-aircraft gunnery. The first such machine, a radio-controlled “Fairey Queen” biplane, was catapulted into the air in 1933 and survived two hours of live fire from a British warship. The following year the Air Ministry ordered 420 such aircraft, known as the Queen Bee. This gave rise to the word “drone”, which is still used to describe unmanned planes. But this was a rare success. More often, UAVs were defeated by the immaturity of the available technology, changing needs, soaring costs and, above all, the successful development of rival technologies.

Pilots wanted

For decades a human pilot's eyes, sense of balance and hands were simply the best way to guide a flying machine, stay on course and cope with problems. Orbiting satellites were better at spying on enemies than wayward reconnaissance drones, and rockets destroyed targets more reliably than temperamental flying bombs did. The success of modern UAVs such as the Predator is not due to a single technological breakthrough, but to the combination of innovations in several areas—faster computers, fly-by-wire controls, satellite navigation, miniaturisation of sensors and fast data-transmission—into a workable and affordable whole.

Early attempts at unmanned guidance involved gyroscopes. During the first world war a flying bomb known as the Kettering Bug was developed. It was an unmanned biplane with player-piano bellows to power its gyroscope and a cash-register mechanism that calculated distance flown by counting the rotations of a propeller-like rotor. But it proved unreliable and inaccurate, not least because the catapult launches upset the sensitive gyroscopes, and it never saw action.

The development of radio (for remote control), radar (to gauge height from the ground) and television (to provide final aim when nearing a target) revived the idea of flying bombs. In the second world war the American navy experimented with TV-guided drones controlled from another aircraft, but these were little more than sideshows in the Pacific, where air power came mainly from aircraft carriers. In Europe attempts to fly old American bombers packed with explosives were a failure. If anything it was the Axis powers that made the breakthrough. The Japanese used suicide *kamikaze* pilots to direct flying bombs with deadly effect against American ships, proving the superior guiding ability of the human brain, and the Germans successfully used the V-1 flying bomb as a weapon of terror against London—a large target a short distance away that was hard to miss.



At the end of the war General Henry “Hap” Arnold, the chief of America's army air forces declared: “We have just won a war with a lot of heroes flying around in planes. The next war may be fought by airplanes with no men in them at all.” It was not to be. The advent of nuclear weapons relaxed the need for pinpoint accuracy, but early American cruise missiles designed to carry them—such as the navy's Regulus and air force's Matador—suffered from the perennial problem of guidance. The initial launch using rockets upset the gyroscopes, and radio guidance was unreliable because vacuum tubes suffered under high acceleration.

Radar mapping was attempted on Matador, but suffered from the limitations of 1950s computers. Another UAV, the Snark, was supposed to have intercontinental range and used a stellar guidance system that weighed one ton. “It is possible to build a transoceanic missile right now,” said one official at the time, “but we don't know whether it will land in Spain, Portugal or France.” One test shot ended up in the Amazon. As nuclear bombs became smaller, ballistic missiles won the day. Rockets flew much faster and required inertial guidance for just a few minutes to put the weapon on a predictable ballistic path. And unlike radio-controlled aircraft, rockets were all but invulnerable to jamming or interception.

Drones sometimes found a useful role in reconnaissance, especially as improvements in surface-to-air missiles made manned spy flights risky. The loss of a U2 spy plane piloted by Francis Gary Powers over the Soviet Union in 1960 led to the search for alternatives. A reconnaissance UAV known as Red Wagon did not fare well, and funding went instead into a fast, high-altitude plane that later became known as the SR-71 Blackbird, and the first Corona surveillance satellites.

“UAVs’ success is not due to a single breakthrough, but a combination of innovations in several areas.”

But America's air force continued to experiment, converting a small jet-powered target drone, the Firebee, into an unmanned spy plane called the Lightning Bug. This was launched from another plane, took photographs of its target, and released a parachute upon its return so it could be picked up by a helicopter. It was flown over China in 1964 and then used in the Vietnam war. It was also used as bait to activate North Vietnamese anti-aircraft missile defences and transmit the resulting signals to a manned aircraft before being destroyed. Navigation progressively improved, from inertial systems to a camera with a video link, but by 1973 the drone still missed about half its targets.

The development of integrated circuits and better data links promised a bright future for UAVs in the 1970s. But the shift of military attention to the Soviet Union, the refusal of European civil authorities to allow unmanned planes in their airspace, arms-control agreements and the perennial problem of accurate navigation over long distances conspired against UAVs. Once again, rival technology for manned aircraft stole the thunder: stealthy designs to reduce the radar signature, precision weapons such as cruise missiles and laser-guided munitions and new sensors such as synthetic-aperture radar that could look through clouds.

Ultimately it was Israel, not America, that revived the use of drones in warfare. It had seen at first hand in the 1973 Arab-Israeli war the damage that modern air defences can cause. In the 1982 Lebanon war, the clever use of small Israeli-built UAVs (incorporating technology developed in America's disappointing

programmes) helped win a startling air campaign in which Syria's anti-aircraft batteries in the Bekaa valley were destroyed and up to 100 Syrian jets shot down against no losses for Israel. In carefully choreographed moves, drones were used to spy on the Syrian defences, fool their radars and gather the electronic intelligence needed to destroy them.

Unlike America, which sought to operate large UAVs at long distances through hostile air space, Israel's drones operated from its own defended territory, and real-time video was transmitted through short line-of-sight data links. Israeli UAV technology became all the rage in the Pentagon, especially after the American navy lost three aircraft over Lebanon in 1983. Predator is in fact derived from a design devised by a former Israel Aircraft Industries engineer. It also benefited from the advent of the satellite-based Global Positioning System in the 1990s, which finally resolved the problem of accurate navigation. And the Predator's ability to stay aloft for a whole day helped to overcome the main shortcoming of satellites and jets: they can only glimpse a target, rather than watch it over time.

But the Predator is slow and vulnerable, requiring full mastery of the air so it can loiter without being shot down. Like Israeli machines, it was designed for benign weather conditions. In the Balkans, where Predators were first deployed, their wings tended to ice over. Pilots still say it is “skittish” to fly, and UAVs of all kinds are much more prone to crashing.

Removing the pilot from the cockpit means the UAV has to be wirelessly connected to its controllers by vulnerable data links, whether via satellites or ground-based receivers. The Pentagon buys as much as four-fifths of its bandwidth from commercial satellite operators, and the launch of a new generation of military-communications satellites is unlikely to satisfy the demand for capacity, given the need to pipe full-motion video back from UAVs. Against the Taliban and Iraqi insurgents, these problems are manageable. But against a more sophisticated state foe, particularly one able to wage electronic warfare, the benefits of such UAVs could quickly fade.

The technology of UAVs has already moved beyond the Predator, however. There are now hundreds of models under development, from vast flying wings intended to stay aloft for five years using solar power (acting more like a satellite than a plane) to tiny bug-like flying machines that could swarm and interact wirelessly.

Beyond the Predator

The cost of building UAVs is falling, making them more attractive for civilian use. It may be a long time, though, before they become as safe and reliable as civil aircraft. Allowing UAVs to fly alongside airliners will require them to develop the means to “sense and avoid” other planes; new air-traffic control systems, based on electronic rather than voice communications, will also be needed. Even in war zones, the American air force is starting to worry about the danger of aircraft colliding with smaller UAVs. Predator pilots say it is not unusual to abort a Hellfire missile strike when an army helicopter unexpectedly comes into view.

RNLA

The shape of planes to come?

Military UAVs are evolving quickly. In recent months Predator's big brother, called Reaper, went into service in Afghanistan; it recorded its first “kill” in October. Reaper can fly twice as fast as Predator and can carry about ten times the payload, including 500lb precision bombs. Future UAVs will carry other weapons, such as air-to-air or anti-radar missiles. Support aircraft such as unmanned air-to-air refuelling tankers are already being considered; so too are unmanned “wingmen” to accompany, and be directed from, manned fighters.

Global Hawk, a large reconnaissance drone, has demonstrated the ability to take off, cross oceans and land without guidance. More processing power on board UAVs will make them more autonomous and reduce the demand for bandwidth. Surveillance drones could, for example, alert operators only when an area under observation has changed. But UAVs' growing complexity could make them as expensive as manned planes.

On the ground, control systems are becoming more sophisticated. As UAVs become more autonomous, pilots will be able to control more aircraft at once, by giving each one occasional instructions. New displays will fuse video from UAVs seamlessly with computer-generated “synthetic” scenery (generated from maps and surveillance imagery), to create the feeling of being in a real cockpit, rather than looking through a “soda-straw”, as pilots describe today's experience.

Might UAVs eventually replace manned combat aircraft altogether? The Centre for Strategic and Budgetary Assessments, an influential American think-tank, advocates cutting back the next generation of manned jets—the Joint Strike Fighter—in favour of unmanned stealth bombers that would operate from aircraft carriers. Much of the work of modern air-defence involves long-distance missile shots rather than acrobatic dog-fights. And when extreme agility is required, the limiting factor on an aircraft's performance is often the need to keep the pilot alive and conscious under high G-forces.

If manned combat aircraft do vanish, however, human pilots will still be needed. Even people developing UAVs doubt that computers will entirely replace the brain in as dynamic, unpredictable and horribly human an activity as war. “Can you still win a medal flying a UAV?” asks Colonel Montgomery, himself a jet pilot. “You may not have the fear of death, but all the other fears are still there: the fear of the unknown and the fear of failure.”

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Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Making waves

Dec 6th 2007
From The Economist print edition

Transport: Maritime engineers are already embracing electric propulsion for ships—and electric planes could be next

ACROSS the road from a golf course and next to a verdant, cow-filled field in Whetstone, a village about as far from the sea as it is possible to get in England, there is a ship's engine-room in a barn. The area is dripping with history—Frank Whittle, one of the inventors of the jet engine, used a neighbouring shed for his project—but this is not some clanking historical curiosity, such as a steam engine rebuilt by an amateur enthusiast. The whirring gas turbine and whining motor being put through their paces in bucolic Leicestershire are at the cutting edge of maritime engineering. The electric drive being tested there could represent the next leap forward in ship design, as significant a technological shift as the one from sail to steam power in the 19th century.

Even since the first intrepid boatman thought to pick up a piece of wood to paddle against the current, boat propulsion has been a terribly mechanical affair. Galley slaves pulled on oars; river-boat steam engines turned paddles; and nuclear reactors boiled water to drive turbines connected to propellers on aircraft carriers and submarines. What makes the experimental engine room in Leicestershire so special is that it leaves out the bit that usually links the engine and propeller. Instead of a propulsion shaft connecting the two, the all-electric drive being tested uses the ship's engines (turbine or diesel) to burn fossil fuels to generate electricity, which is then routed down thick cables to an electric motor that drives its propellers.

The idea of using electricity to drive ships is not new. Almost a century ago, around the time of the emergence of modern ship propulsion, electric drives were seen as viable contenders to compete with the then-rising mechanical drives. In 1912 America's navy built an electrically powered collier, followed a few years later by a string of battleships which proved capable workhorses during the second world war. Some electric-drive warships used 20% less fuel than conventional geared-turbine vessels. But these early examples were large and unwieldy, and the idea was abandoned.

Its recent rebirth has been almost as rapid as its fall, helped by two related developments: power electronics capable of handling huge flows of current, and smaller, more powerful electric motors. These advances have allowed shipbuilders to reduce the size and weight penalties associated with electric drives. They have also made possible the development of totally integrated power systems, which make energy fungible: instead of having one engine dedicated to driving the ship and another one devoted to generating shipboard power, electricity from multiple sources can simply be routed to wherever it is

needed at the time.

And that is why advanced navies such as Britain's and America's are now among the most enthusiastic and earliest adopters of electric-drive ships. As warfare has become more digital, the demand for electricity on board warships has increased. Radar, computers and combat systems now account for as much as 30% of the fuel burned on modern warships. And the demand for power could be about to jump dramatically. Some navies are already testing rail guns, which use huge amounts of electricity to produce a magnetic field which then accelerates projectiles to many times the speed of sound.

Even more futuristic and power-hungry applications are within sight, such as “direct energy” weapons that zap enemy ships and “electric armour” that vaporises incoming missiles. With such demands for power, some of it only for a fraction of a second, warship designers are keen to have a single system doing all manner of things. Think of the *Enterprise* in “Star Trek”, where power is diverted to the shields, weapons or warp drive as needed. “We're going with electric drive because of warfighting need,” says Rear-Admiral Kevin McCoy of the American navy. “We are almost at the limits of technology and affordability in making improvements in mechanical drives.”

Electric drives offer other advantages, too. By distributing engines and generators around a ship, designers can make it more resistant to damage. Maintenance is easier if some of the engines can be stopped without halting the ship. And electric drives can help to cut costs. Although they are more expensive, bigger, heavier and in theory less efficient than mechanical drives, they use much less fuel. This is because the diesel engines and gas turbines commonly used to power ships are most efficient when buzzing away constantly at close to their maximum output. Throttle them back even a little, and the amount of energy obtained for each barrel of fuel burned falls sharply. That does not matter for ships that potter along all day and night at the same speed from one port to another; their engines can be run at their most efficient setting all the time. But in the navy, few ships have that luxury.

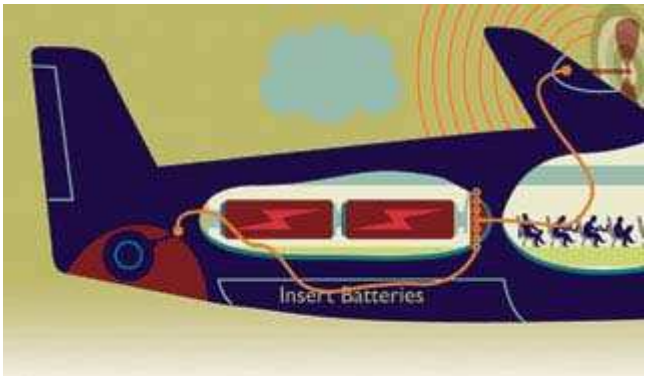
By some estimates, American navy ships spend 80% of their time travelling at half speed, which requires barely one-eighth of the power needed to propel a ship at top speed. But this requires them to burn almost as much fuel as they would when going much faster. By using an electric drive of the sort that is purring away in Leicestershire, ships can fire up their engines one at a time and run each at its most economical throttle setting.

Take Britain's newest warships, the Type 45 destroyers, which will be powered by the system now being tested in Whetstone. Each one will have four engines, half as many as the ships they are replacing, and usually only one will be running, says Paul Norton of the Ministry of Defence. The savings can be huge. America's Congressional Research Service reckons that installing electric drives on naval ships can cut fuel use by 10-25%. The American navy, which already has a handful of electric-drive support ships, expects savings of close to 20% for future warships using the technology.

Divert all power to the disco

Perhaps surprisingly, many of these advantages also apply to cruise liners, which present designers with many of the same problems as warships. Cruise ships need huge amounts of power. Stephen Payne, the chief designer of the *Queen Mary 2*, reckons the ship—the world's biggest passenger liner when it was launched in 2003, and fitted with an electric-drive system—could supply enough electricity for a town of 700,000 people.

Much of this power is used to keep passengers happy, running air conditioners during hot Caribbean days, for instance, and powering discos and cinemas in the evenings. Then, once all the passengers have gone to bed, the power can be routed down to the propellers for a high-speed dash to the next port. The technology is also being applied in cargo shipping. Makhlouf Benatmane of Converteam, one of the leading designers of electric drives for ships, reckons that almost two-thirds of liquefied natural-gas carriers now being built have electric drives. These cost about 4% more than the steam turbines that are traditionally used, but offer fuel savings of 10% or more, he says.



Now that electrical propulsion is being taken seriously in ships, not to mention trains and cars, can electric drives defy gravity and remake air travel? In some ways they are already doing so. Manufacturers of civil and military jets are collaborating on projects to add more electrically powered devices to aircraft, such as landing gear and flaps. These are lighter and more reliable than the hydraulic and mechanical systems now in use and could draw power as needed from non-essential systems such as in-flight entertainment. Military jets, meanwhile, need ever more power for their radar systems or to jam and dazzle those of their enemies. And airborne lasers are on the way.

Electrical propulsion is much more difficult. But some small experimental aircraft are already flying with electric motors driving their propellers. They are generally powered by high-discharge lithium-polymer batteries, which are also being used in some electric cars. Fuel cells are another option. Boeing is testing an electrically powered light aircraft which uses both batteries and a fuel cell as power sources. Some gliders also have small electric motors as auxiliary propulsion systems. Just a small amount of electrical propulsion, carefully applied, can dramatically increase the amount of time a glider can stay in the air. And many unmanned aerial vehicles, not to mention remote-control aircraft flown by hobbyists, are electrically powered.

Yet all these electrical aircraft are small and have limited range. What of larger aircraft? Retrofitting a large airliner with electric motors instead of engines would not be feasible because the power-to-weight ratio of an electric motor cannot compete with that of a jet engine, and storing and generating the energy needed for a long-haul flight would not be possible given the shape and size constraints of existing aircraft. But a “blended wing”—an aircraft in which the fuselage is a flat, tail-less structure resembling a giant wing—could provide huge efficiency gains and may form the basis of future airliners. Coincidentally, this shape would also lend itself to centrally placed generators, which could be gas turbines or fuel cells, driving electric fans or pusher-propellers distributed along the back edge of the wing, or blended into the body.

These propellers could be driven by superconducting motors, which can generate three times the torque of a conventional motor of the same weight and power input, according to a paper published in August in the journal *Superconductor Science and Technology* by Philippe Masson and his colleagues at Florida State University. American researchers are working on superconducting technology for maritime propulsion, which would leapfrog the British electric-drive system. Just as the earliest aircraft owed much to boat-building techniques at the start of the 20th century, the same might be true of electric-drive aircraft in the 21st.

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Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Watching as you shop

Dec 6th 2007
From The Economist print edition

newscast

Retailing: Big shops are using elaborate technology to monitor and influence the behaviour of their customers

IN A recent British television commercial, John McEnroe, a veteran tennis star, is seen racing his long-time rival Bjorn Borg around a Tesco supermarket. After arriving in the checkout queue just ahead of his opponent, Mr McEnroe is distraught to see an employee appear and open another till, giving Mr Borg the upper hand. The advertisment ends with a reference to Tesco's “one in front” initiative, which aims to reduce waiting times by opening additional tills whenever there is more than one customer waiting at a checkout. This scheme has been running for many years, but Tesco recently updated it by investing in customer-monitoring technology supplied by Irisys, a British company.

The system, called Smartlane, has two elements: sensors by the doors count the number of people entering and leaving the shop, and sensors by the tills work out how fast the queues are moving and how many “shopping units”—groups of people, such as families or couples, who will make one transaction between them—are standing in each queue. (Shopping units are identified using an infra-red sensor that tracks the trajectory and behaviour of “hot blobs” when they enter its field of vision; this approach is 95% accurate, says Chris Precious of Irisys.) All this information can then be used to predict how many tills will be needed up to an hour in advance and monitor average waiting times and queue lengths. In Tesco's case, a line longer than one shopping unit triggers the opening of another till. Sir Terry Leahy, Tesco's boss, said last year that the monitoring system had reduced waiting time for customers and helped to boost the firm's profits.

Tesco is not the only retailer using technology to keep tabs on people in its stores. Mr Precious says Price Chopper, an American grocery chain, is in the process of introducing Smartlane; and Marks & Spencer, a British shopping chain, uses Irisys's infra-red sensors, as does Abercrombie & Fitch, an American fashion chain. Brickstream, a supplier of customer-monitoring systems based on dual-lens cameras, which are more accurate than single-lens cameras in tracking and counting applications, counts big retail chains including Toys “R” Us, Office Depot and Walgreens among its clients.

Rather than monitoring queue lengths, however, Brickstream's system, called BehaviorIQ, is used by retailers to gather data on where their customers go, where and how long they stop, and how they react to different products. This information can then be compared with the store's transaction log to determine the effectiveness of store layout, product fixtures and other variables. In-store designs and marketing campaigns that work can be identified and improved upon, and those that do not can be replaced with something more profitable. Retailers, it seems, are buying the idea that by watching customers while they shop—what might be called “retail surveillance”—and redesigning their shops accordingly, they can get people to spend more.

On the shop floor

One of the largest customer-monitoring projects undertaken so far is PRISM (or “Pioneering Research for an In-Store Metric”), a collaboration between Nielsen Media, a market-research firm, the In-store Marketing Institute, based in Chicago, and a consortium of consumer-goods manufacturers and retailers including Coca-Cola, Procter & Gamble and Wal-Mart. The project, which completed its first big trial in September, involved the use of sensors at the entrance and exits and in some of the aisles of 160 stores across America. These sensors recorded data on customer-traffic patterns, to which was added further information recorded by human observers. By comparing the resulting data with sales information, it was then possible to gain insight into shoppers' behaviour.

Preliminary results from the PRISM programme included the finding that two-thirds of shoppers who made a visit to the salty-snacks aisle made a purchase, but the people visiting the dairy aisle were far less likely to buy something. When observational data on the number of children present during a shopping trip was taken into account, the results were even more detailed: the PRISM results showed that although children took part in only 13% of food-shopping trips, shoppers bought more when children were with them. Purchase of seasonal items was two and a half times more likely with children in tow, but surprisingly there was no correlation found between the presence of children on a shopping trip and higher spending on sweets.

With this kind of fine-grained data, says George Wishart, the head of Nielsen's in-store division, retailers can adjust store layouts and staffing levels accordingly. Although retailers think they know how to position products in a way that will maximise sales, says Peter Hoyt of the In-store Marketing Institute, “the science of adjacency is not a science.” With PRISM, he says, the gut feeling that peanut butter should be placed on a shelf next to jam in order to increase the likelihood of a combination purchase can be tested directly against sales data.

Best Buy, a big American consumer-electronics chain, takes this a step further. It uses Brickstream's BehaviorIQ cameras to collect data on its customers' behaviour patterns and has used this information to divide them into five customer types—young technology enthusiasts, suburban mothers, affluent early adopters, family men and small-business owners—who want different things. Each group is then provided with an area of the shop designed to meet their needs.

“Shoppers are not just being monitored by cameras and sensors—sometimes speech is recorded, too.”

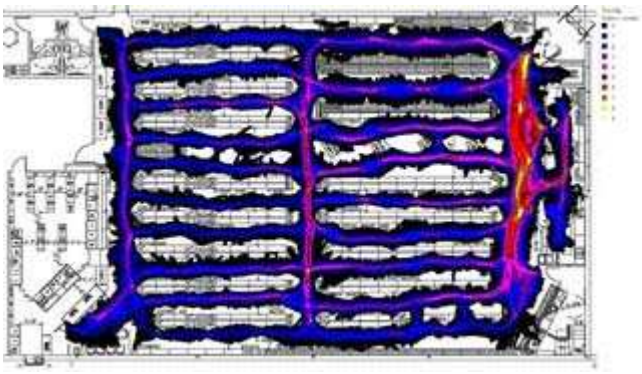
As the technology improves, it is getting easier for other retailers to do the same sort of thing. VideoMining, for example, a spin-out from Pennsylvania State University, uses a combination of video cameras and software to capture and analyse thousands of hours of footage of customer behaviour. As well as providing information about customer behaviour, the firm's software can also determine each shopper's sex, age range and ethnic group with an accuracy of around 80%, says Jeff Hershey of VideoMining. The result is an “activity map” which can help retailers to identify the factors that drive higher sales. The system can even be programmed to detect the characteristic behaviour of shoplifters.

Inevitably, all this raises concerns about privacy. Counting customers with motion sensors as they enter a supermarket is one thing, but sorting them into social or racial groups using video analysis is another. Mr Hershey responds that none of the footage or information about individual shoppers is stored. Besides, says John Greening of the Medill School at Northwestern University, customers are generally willing to give up some personal information if they feel they are getting some benefit in return. Rather than seeing customer monitoring as an invasion of privacy, he considers it a means of making shopping a more pleasant experience for “time-compressed” (ie, busy) consumers. These systems, he says, are “not a matter of Big Brother”, but rather a means of gaining insight and “understanding motives”.

Listening in

Shoppers are not just being monitored by cameras and heat sensors, however; sometimes their speech is being recorded, too. Recordant, an in-store monitoring company based in Atlanta, provides shop assistants with digital-audio recorders, to be worn around their necks, which record all their conversations with shoppers. At the end of each day the recording devices are plugged into special docking stations and the recordings are uploaded to Recordant's headquarters for analysis. Its software trawls the recorded dialogue for particular words or phrases without the need for any human input in order to provide accurate information on employee performance and customer behaviour.

Brickstream



Brickstream maps a supermarket's hot spots

Recordant says that trials in 40 locations have proved the value of the technology: one retailer was able to show that there was a 300% increase in sales of products recommended by shop assistants to customers. By providing precise measurements of this kind, the technology allows retailers to refine their training programmes and evaluate the effectiveness of promotions. They can even collect “competitive intelligence” by programming the system to search for the names of rival retailers, says Chris Etter, the chief executive of Recordant.

Unlike systems based on video cameras or sensors, Recordant's technology is required to notify customers explicitly that their conversations are being recorded. To this end, the recording devices include a small video screen which displays a message informing shoppers what is going on. Mr Etter admits that both employees and customers have expressed worries about privacy and have shown some resistance to the devices. But he likens this to the initial disquiet over the recording of customer-service telephone calls, something that is now widely accepted. Besides, he says, the system can provide protection for employees who get involved in disputes with fractious customers.

As useful as customer-tracking systems may be for exonerating harassed staff or minimising shoplifting, however, their primary objectives are clear. In an age when traditional “bricks and mortar” retailers face stiff competition from online merchants, any means they can use to get customers into their shops and buying as much as possible is seen as a worthwhile investment. Long before the advent of e-commerce, Wal-Mart's founder Sam Walton set out his vision for a successful retail operation: “We let folks know we're interested in them and that they're vital to us—’cause they are,” he said. Customer-monitoring systems are underlining just how interested, and just how vital.

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Economist.com PRINT EDITION TECHNOLOGY QUARTERLY

Cyberlawyer 2.0

Dec 6th 2007
From The Economist print edition

Lawrence Lessig is known for his work at the interface between technology and law. Why is he shifting his focus to corruption?

WHEN working as a clerk in the early 1990s for Antonin Scalia, a Supreme Court Justice, a twenty-something law graduate became frustrated by the limitations of the creaking mainframe technology used by the court to publish its rulings—a system called Atex that is well known to veteran journalists. So he and another clerk made a presentation about the virtues of personal computers to the Supreme Court's technology committee. The verdict from its chairman, Justice Sandra Day O'Connor, was swift. “I want PCs on everyone's desk on Monday,” she ruled. This was more than a one-time judicial victory. The incident also hinted at a legal career in which Lawrence Lessig—today one of America's leading cyberlaw experts—would always argue on the side of technological progress.

Today the 46-year-old is a professor at Stanford Law School and founder of its Centre for Internet and Society. He is also a board member of the Electronic Frontier Foundation, a internet lobby group, an avid blogger and a prolific columnist. He is the driving force behind Creative Commons, a non-profit organisation that promotes the use of copyright licences that encourage the sharing of creative works, extending the principles of open-source software into other fields. But ultimately Mr Lessig's real skill is bridging the gap between law and technology, encapsulated in his dictum “code is law”.

Mr Lessig has concentrated for a decade on copyright law and its interaction with the internet. So he left some people feeling confused earlier this year when he announced a new focus for his campaigning efforts: tackling corruption. Not everyone understood that this change in academic and activist emphasis is more of a shift in strategy than in substance.

For years Mr Lessig has presented legal arguments against excessive copyright extensions. But he says lawmakers are so in thrall to big-media lobbyists that they do not even realise that counter-arguments to copyright extensions exist. Even though Britain's Gowers Review, published in 2005, argues against such extensions, and eminent economists such as the late Milton Friedman have declared the importance of copyright limits to be a “no brainer”, Mr Lessig says legislators are clueless about “an issue that any rational policymaker has no problem understanding.” Swayed by campaign contributions from vested interests—such as film studios, music companies and book publishers—America's Congress has lengthened copyright terms 11 times in the past four decades, he observes.

And Mr Lessig sees the same sorts of interference in other domains, such as the influence of sugar lobbies on government nutrition boards and that of pharmaceutical lobbies on doctors. “I felt I was spending too much time on the substance of copyright, as if that was the issue,” he says with palpable frustration. “I'm really getting tired of telling this story. It's not rocket science. But governments always get it wrong. What links these issues is that there is so much money involved in protecting them.”

Technically legal

To use an analogy from the world of computing, having failed to get a piece of software (copyright law) to run properly, Mr Lessig believes that the problem is caused by flaws in the underlying operating

system (the political process). He has yet to reveal exactly how he hopes to expose and reduce the inappropriate influence of money on important matters such as copyright law and health—something that, it must be said, he is hardly the first to attempt. But it is sure to involve a big dose of technology. Mr Lessig's work has always been inextricably linked with it, whether teaching law students, writing books or promoting innovation. It all began when he learned to program on a mainframe computer as a high-school student in Pennsylvania. After that, he recalls, “I started buying things at Radio Shack and began tinkering.”

There was no question, however, of this hobby becoming a full-time career. Years before, during the Watergate scandal, Mr Lessig's uncle had inspired him to pursue law. Richard Cates, the associate special general counsel to the House Judiciary Committee during Richard Nixon's impeachment hearings, told his nephew that law was the only place where reason controls power. Though Mr Lessig's later battle to reverse copyright extensions suggested otherwise, the young man decided that law was the career for him.

He remained wedded to this choice even as his views in other areas changed. A church-going Protestant who belonged to the National Teen Age Republicans, Mr Lessig was the youngest member of the Pennsylvania delegation to the 1980 Republican Convention. After studying economics and management at the University of Pennsylvania in Philadelphia, Mr Lessig entered Cambridge University in England as an economics scholar—his strongest chance at gaining admission, he calculated—but with no intention of taking a degree in economics. “It was a total bait and switch,” he says, with a rare grin of mischievousness. Instead Mr Lessig ended up taking a degree in philosophy.

While in Europe he travelled several times to the Soviet Union, at times smuggling in heart-valves for Jewish refuseniks. Today Mr Lessig may complain that “the Democratic Party excessively listens to Hollywood” on copyright issues, but he is no longer the fervent Republican of his teenage years. He is a “card-carrying member” of the American Civil Liberties Union, quotes Al Gore and bemoans how far George Bush has strayed from the constitutional powers granted to him.

“Copyrights will not expire so long as Congress is free to be bought to extend them again.”

After returning to America and attending law school at Yale, Mr Lessig began his legal career. He worked as a clerk for Judge Richard Posner in the Seventh Circuit Court of Appeals and later for Justice Scalia. He went on to teach at the University of Chicago before moving to Yale and then Harvard, teaching what was then a relatively obscure subject—cyberlaw—at all three law schools. In 1997 this led Judge Thomas Penfield Jackson to appoint Mr Lessig as the “special master” in the antitrust case against Microsoft. He was later removed from the case after an appeals court ruled that the powers he had been granted were broader than those allowed by the rules governing special masters, and he was asked instead to file a brief as a “friend of the court”. The case established Mr Lessig as one of America's experts in technology law.

In 2000 he switched coasts and moved to Stanford Law School, in the heart of Silicon Valley, where he teaches today. By this time he had become involved in the case launched by Eric Eldred, a literacy advocate known for making out-of-copyright books available free online, who was contesting the 20-year copyright extension granted in the 1998 Sonny Bono Copyright Term Extension Act. Mr Lessig has no beef with copyrights *per se*, but he objects on constitutional, educational and creative grounds to their continual extension, which makes them, in effect, perpetual.

The constitution gives Congress the power to “promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.” Having started as a renewable 14-year term in the 18th century, American copyright terms now endure for the life of the artist plus 70 years. And where copyright once concerned only an elite class of authors and publishers, the internet now makes it a daily issue for millions around the globe. For people creating videos, digitising books and mashing up online content of all kinds, “it's impossible not to bump up against copyright,” says Mr Lessig.

So in 2001 he founded Creative Commons, offering everyone an alternative to standard copyrights through various gradations of permission for use (right down to “no rights reserved”). “Before Creative Commons, there was no easy way to do all that,” says Jonathan Zittrain, professor of internet governance and regulation at Oxford University in England. Today more than 100m online documents sport Creative Commons licences in place of the standard copyright symbol.

But in spite of this and three copyright cases Mr Lessig has

brought to court—including arguing the *Eldred* case before the Supreme Court—copyright terms have not been rolled back. The Supreme Court ruled that copyright extensions do not violate the spirit of the constitution, provided they are still for “limited terms”, and rejected Mr Lessig's argument that such extensions can have the effect of limiting freedom of speech.

Although some see his shift from copyright to corruption as a sudden change of heart, Mr Lessig's writings have long drawn a connection between the two. In a 2004 article about the *Eldred* case called “How I Lost the Big One”, Mr Lessig bemoaned that “copyrights have not expired, and will not expire, so long as Congress is free to be bought to extend them again,” adding that congressmen are, indirectly, defending their “gravy train of contributions”.

Not everyone agrees with Mr Lessig's view that industry money has had an undue influence on copyright. A few wins in the legislature do not constitute “massive corruption”, says Hilary Rosen, who for years locked horns with Mr Lessig when she was head of the Recording Industry Association of America, a body that represents the music industry. “I don't buy into the premise—unless he thinks that Benjamin Franklin and Thomas Jefferson started the corruption,” she says.

As he prepares to embark upon his new campaign, Mr Lessig—whose conversation frequently sounds footnoted, so often does he credit the book or person who inspired the point he is making—is already examining the model used by organisations such as MAPLight.org and the Sunlight Foundation, both of which provide databases that enable American voters to see which groups fund particular politicians, what their voting records are, which companies they own shares in, and so on. These are good examples of how technology can promote transparency. “Technology will be a crucial part of solving this problem,” he says, because it “challenges the balance of power”.

Mr Lessig goes to Washington

He is also arguing his case in speeches and on his blog, with the hopes of inspiring and encouraging others to participate in his campaign, in a manner akin to Wikipedia. If “you can architect the problem into bite-sized chunks” and then motivate volunteers, the results can be impressive, he says, noting that Wikipedia has grown to be one of the internet's ten most popular sites. “If we mobilise people to think of [corruption] as a trackable problem, we can use this technology to change Washington,” he declares. His supporters reckon that if anyone can do it, Mr Lessig can. Whether speaking to a legal, policy or technology crowd, says Mr Zittrain, “Larry can take the incomprehensible debates from academia and put them on a bumper sticker.”

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Offer to readers

Dec 6th 2007
From The Economist print edition

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Video games

World of dealcraft

Dec 6th 2007
From The Economist print edition

The biggest-ever video-game deal shows how the industry is changing

THE bride and groom, a guitar-wielding rock vixen and a muscle-rippling dragon-slayer, make an odd couple—so it is hardly surprising that nobody expected their marriage. But on December 2nd the video-game companies behind “Guitar Hero” and “World of Warcraft”, Activision and Vivendi Games respectively, announced plans for an elaborate merger. Vivendi, a French media group, will pool its games unit, plus $1.7 billion in cash, with Activision; the combined entity will then offer to buy back shares from Activision shareholders, raising Vivendi's stake in the resulting firm to as much as 68%.

Activision's boss, Bobby Kotick, will remain at the helm of the new company, to be known as Activision Blizzard in recognition of Vivendi's main gaming asset: its subsidiary Blizzard Entertainment, the firm behind “World of Warcraft”, an online swords-and-sorcery game with 9.3m subscribers. The deal was unexpected, but makes excellent strategic sense, says Piers Harding-Rolls of Screen Digest, a consultancy. Activision has long coveted “World of Warcraft”, and Vivendi gets a bigger games division and Activision's talented management team to run it. As well as making sense for both parties, the $18.9 billion deal—the biggest ever in the video-games industry—says a lot about the trends now shaping the business.

The first is a push into new markets, especially online multiplayer games, which are particularly popular in Asia, and “casual” games that appeal to people who do not regard themselves as gamers. “World of Warcraft” is the world's most popular online subscription-based game and is hugely lucrative. Blizzard will have revenues of $1.1 billion this year and operating profits of $520m. “World of Warcraft” is really “a social network with many entertainment components,” says Mr Kotick.

Similarly, he argues, “Guitar Hero” and other games that use new kinds of controller, rather than the usual buttons and joysticks, are broadening the appeal of gaming by emphasising its social aspects, since they are easy to pick up and can be played with friends. Social gaming, says Mr Kotick, is “the most powerful trend” building new audiences for the industry. He is clearly excited at the prospect of using Blizzard's expertise to launch an online version of “Guitar Hero” for Asian markets. Online music games such as “Audition Online”, which started in South Korea, are “massive in Asia,” says Mr Harding-Rolls.

A second trend is media groups' increasing interest in gaming. Vivendi owns Universal Music, one of the “big four” record labels. As the record industry's sales decline, it makes sense to move into gaming, a younger, faster-growing medium with plenty of cross-marketing opportunities. (Activision might raid Universal's back catalogue for material for its music games, for example, which might in turn boost music sales.) Other media groups are going the same way. Last year Viacom, an American media giant, acquired Harmonix, the company that originally created “Guitar Hero”. It has been promoting its new game, “Rock Band”, using its MTV music channel. Viacom has also created online virtual worlds that tie in

with several of its television programmes, such as “Laguna Beach” and “Pimp My Ride”. Disney bought Club Penguin, a virtual world for children, in August. And Time Warner is involved in gaming via its Warner Bros Home Entertainment division, which publishes its own titles and last month bought TT Games, the British firm behind the “Lego Star Wars” games.

Time to level up

The third trend is consolidation, to plug gaps, address new markets and achieve economies of scale. Electronic Arts, for example, until this week the largest independent games-publisher (Activision Blizzard will be bigger), recently bought two studios, BioWare and Pandemic, to strengthen its position in role-playing and action games. Greater scale can help to spread costs and risk as new games become costlier to develop. A new title for Microsoft's Xbox 360 console or Sony's PlayStation 3 (PS3), both of which have high-definition graphics, can cost as much as $30m, says Mr Harding-Rolls. Bigger firms can afford to develop tools that make it easy to produce different versions of the same game for different platforms, says Robbie Bach, the head of Microsoft's entertainment and devices division. They can also make savings on distribution.

This week's deal shows how the software business is changing; and things are happening in hardware too. Microsoft's Xbox 360, Sony's PS3 and Nintendo's Wii are fighting for supremacy. In September the Xbox 360, which was launched in late 2005, a year ahead of its two rivals, was overtaken by the Wii as the most popular of the present generation of consoles (see chart). Mr Bach says he is unfazed. “It's not even a statistic I track all that closely,” he says. The Wii's popularity stems from its low price and its innovative motion-sensitive controller, which can be pointed and waved to control the on-screen action and encourages novices to give gaming a try. But the Wii lacks the high-definition graphics of its two rivals, so it could soon start to look dated. The real battle is between the Xbox 360 and the PS3, Mr Bach suggests.

Sales of the PS3, which have been sluggish, seem to have taken off after Sony removed some features and dropped the price. In Japan the PS3 even outsold the Wii in November, according to Enterbrain, a market-research firm. As more games become available for the PS3 next year, sales are expected to rise even further, says Mr Harding-Rolls, so that by 2011 the PS3 will have caught up with the Wii. In short, each of the consoles will be in front at various points in the “console cycle”.

In the previous cycle, dominated by Sony, programmers could address most of the market simply by writing games for the PlayStation 2. But if all the consoles matter, games companies have to produce games that run on all of them. That strengthens the case for consolidation. In other words, expect more deals.

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Energy liberalisation in Europe

Twists and turns

Dec 6th 2007 | PARIS
From The Economist print edition

Plans to liberalise Europe's energy markets are in disarray

THE European Commission this week called for yet another scheme to promote energy liberalisation after opposition by France and Germany blocked two earlier proposals. In September the European Union's energy commissioner, Andris Piebalgs, offered two paths to a single European energy market. Integrated power companies could either unbundle their gas pipelines or electricity grids into separate companies, or keep them but run them at arm's length.

The idea was to open the European market by making it easier for small energy companies to buy and sell power across Europe, with the hope this would lower prices. Independent network companies would be more likely to upgrade facilities by, for instance, improving cross-border links.

The big energy groups, such as E.ON and RWE in Germany and EDF and GDF in France, argue that big, integrated companies are needed—to bargain with Russian and Algerian gas suppliers, for example. The commission wants opponents to table a third option to promote liberalisation, in a bid to win majority support for liberalisation. The Franco-German opposition bloc includes seven smaller member states such as Austria and Latvia. The liberalisers, led by Britain and the Netherlands, comprise eight members; ten states are undecided.

While all this wrangling goes on in Brussels, the industry is changing shape. Suez, a Franco-Belgian energy group, is merging with France's GDF (the union is due to be blessed by shareholders next year). Other tentacles are also being extended across borders. Enel, Italy's biggest power company, was one of the winners in the epic fight for Endesa, Spain's energy giant, earlier this year. Now Enel is taking a 12.5% stake in a new nuclear power-station being built in France by EDF, the state-owned energy giant, as a way of getting a toehold in the French market. Under an agreement ratified at a Franco-Italian summit on November 30th, Enel also has options to take stakes in future EDF power stations, both gas-fired and nuclear. In return, EDF will be able to participate in some of Enel's projects. So a new cross-border power group is quietly shaping up.

This week the French finance minister, Christine Lagarde, indicated that she would consider selling further shares in EDF, after the sale of 2.5% on Monday. The government now owns just under 85% of EDF and can reduce its stake to 70% without further legislation. But it is still pulling the strings. Much as the commission wants to unbundle generation and distribution, the opponents of liberalisation have a very different view of how the industry should look.

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Aviation

Opposite headings?

Dec 6th 2007
From The Economist print edition

Why both Boeing and Airbus are grumbling about their supply chains

DESPITE bulging order books, the mood at Airbus and Boeing is far from celebratory. Both aviation giants are moaning loudly that their production systems and supply chains are flawed, albeit for ostensibly different reasons. This week Louis Gallois, the boss of EADS, the Franco-German aerospace consortium that owns Airbus, added substance to warnings a week earlier by the planemaker's chief executive, Tom Enders, that the dollar's decline was “life-threatening” for the firm. Mr Gallois said it was no longer just a possibility that Airbus would have to move a large part of its production to “the dollar zone” or low-cost countries, but a certainty.

Airbus is already in the middle of Power8, a big restructuring plan that involves the loss of 10,000 jobs and the sale of several plants, which is meant to offset the losses caused by the delays in delivering the A380 superjumbo. But Power8 assumed that a euro was worth $1.35, not today's $1.47. Mr Gallois estimates that each 10-cent rise in the euro costs Airbus €1 billion. At present, Airbus makes 76% of its purchases within Europe, but generates over 60% of its sales elsewhere. It must now shift some production abroad—known in French as *délocalisation*.

Until now, Airbus has mainly used *délocalisation* as a means of drumming up orders or investment. Next year it will open an assembly line for the single-aisle A320 in China, which will be followed by a second site for making composite components. The conversion of A320 passenger aircraft into a cargo variant will take place in Russia, which will also get 5% of the work on the new A350. And on November 30th Airbus, which has yet to penetrate the Japanese market, revealed that it was in talks with Japanese companies to take on more than 5% of the A350 programme.

Airbus is now likely to forge ahead much further. Mr Gallois suggests that when the A350 enters service in 2013, 70% of it will have been “purchased” in dollars, against 50% for the A380 and an average 24% of Airbus production today. Because Airbus insists that some of its European suppliers price in dollars that means about 50% of the A350's production will be outsourced. New aircraft, such as the A320's successor, may be made almost entirely outside the euro-zone.

Airbus maintains that exchange rates are not the only reason for outsourcing: it is keen to tap into composite-manufacturing expertise wherever it exists. It also insists that it will not repeat the mistakes Boeing has made with its new 787 Dreamliner, about 80% of which has been outsourced. A few weeks ago Mike Bair, the executive responsible for the 787 programme, who was recently moved sideways after mounting production delays, launched a withering attack on some of the companies recruited to build the plane. He said that in future Boeing would not entrust design work to partners who “proved incapable of doing it”, and would make suppliers build factories close to Boeing's main assembly operation, rather than flying semi-finished sections of the aircraft round the world on huge Dreamlifter transporters.

It is too early to conclude that the two rivals are heading in opposite directions—Boeing renouncing the global supply chain just as Airbus adopts it. Each company has its own axe to grind. Airbus needs greater flexibility, and the weak dollar provides helpful cover as it takes on its grumbling unions. Boeing, for its part, wants to shift the blame for delays to the 787 on to its partners. The logic of global outsourcing in the aerospace industry remains powerful. Whatever they may be saying now, Airbus and Boeing are more likely to converge than to diverge.

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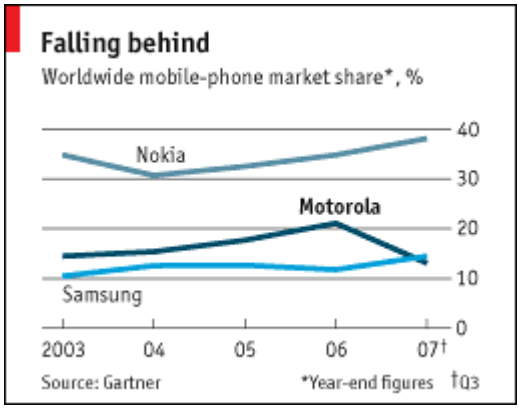
Motorola

Goodbye, Moto

Dec 6th 2007
From The Economist print edition

America's ailing electronics giant gets a new chief executive



NOT many bosses would hold mobile phones against their heads like giant ears. But Ed Zander, the boss of Motorola, is notorious for wisecracking. Doubtless he also made a joke when he told the firm's board that he would step down at the end of the year. Yet it is unlikely that he felt good about the resignation, which was announced on November 30th. He did not achieve what he was hired to do nearly four years ago: fix Motorola's mobile-phone business, which generated two-thirds of the firm's revenues and profits last year. This task will now fall to his successor and number two, Greg Brown.

A year ago hardly anyone would have predicted such an outcome. A veteran of Sun Microsystems, a Silicon Valley computer-maker, Mr Zander seemed to have the Midas touch. Among other things, he brought better financial discipline and a more risk-taking culture. He rejuvenated the firm's cable-television unit. And he revived Motorola's mobile-phone business by making a big bet on the ultra-thin RAZR (pronounced “razor”) handset, which became a hit. More than 110m have been sold since its launch in late 2004.

But the metallic RAZR soon lost its shine. Motorola cut its price to gain market share and launched a dearer version to prop up margins. Yet consumers did not play along, and kept buying the cheaper RAZR and the host of imitators it spawned. Motorola also failed to invest enough in phones for third-generation (3G) networks, or software for multimedia functions. Its sales fell, and Samsung overtook it as the industry's number two (see chart).

So Mr Zander's resignation did not come as a surprise. Indeed, it appears to have been carefully planned, since he will stay on as “strategic adviser” to his successor until 2009. Mr Brown, who joined the firm in 2003, has also been carefully groomed for the top job: in March he was made president and chief operating officer, and has spent most of his time since then reorganising the mobile-phone business. This included replacing half of the unit's leadership and preparing a new line-up of phones, due out next year.

Mr Brown, who is said to be balanced and likeable (though less of a wise guy than his predecessor), is certainly qualified for the job. The big question is whether, as an insider handpicked by Mr Zander, he will be tough enough to turn Motorola's fortunes around. And even if next year's handsets cut the mustard, they will not have much of an impact on the company's business until 2009, notes Carolina Milanesi of Gartner, a consultancy.

Mobile phones are not Mr Brown's only problem. The network-equipment business could also do better. Motorola is facing stiff competition and may be betting, with WiMax, on the wrong next-generation wireless technology. An alliance between Sprint and Clearwire, two American operators that had planned to build a nationwide WiMax network together, fell apart in November.

Mr Brown's efforts in recent months have already produced results. In the most recent quarter Motorola beat expectations and reported a small profit after two loss-making quarters. But if things do not get much better fairly soon there will be calls to break up the company, as Carl Icahn, an activist investor, suggested earlier this year. Yet this might make things worse, because diversification insulates Motorola from the volatility of the mobile-phone business, says Brian Modoff, an analyst at Deutsche Bank. The loss of synergies between its different units would also undermine the firm's vision of providing “seamless mobility” to customers by making more than just handsets. But since Motorola has failed to make this vision a reality, that might be no bad thing.

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Luxury goods

Less exuberant

Dec 6th 2007
From The Economist print edition

After a bumper year, the luxury-goods industry is heading for uncertain times

MORE than any other industry, the luxury-goods business needs people to feel good about spending money. So at a recent conference in Moscow, Bernard Arnault, the head of Moët Hennessy Louis Vuitton (LVMH), the world's biggest luxury-goods group, went to great lengths to dismiss investors' fears about the impact on the industry of America's credit crisis, a possible recession and the weak dollar. Indeed, Mr Arnault said he expects the industry's sales almost to double in the next five years, thanks to strong demand from emerging markets and the creation of new wealth across the globe.

After a depressing period at the beginning of the decade when the terrorist attacks in America, the outbreak of SARS and the war in Iraq reduced international travel and people's appetite for frivolous things, the industry has had three excellent years. According to Bain, a consultancy, sales of luxury goods grew by 9% in 2006 to €159 billion ($200 billion) and will reach about €170 billion this year, which would be double the 1996 figure. Europe remains the biggest market, with about 40% of sales, though the strongest growth is in China, Russia, the Middle East and some Latin American countries.

AFP

Looking a bit wobbly

Can the industry really double again in half the time? Analysts at Citigroup say that Christmas will be good this year for luxury-goods firms, but they are more cautious about next year because of worries about falling demand in America. It is tempting to think that luxury goods are isolated from the broader economy, because customers are rich enough to ignore it, says Luca Solca, a luxury-goods analyst at Bernstein Research. But the industry's expansion into a broader “aspirational” market, by selling to the merely affluent, makes it susceptible.

And as luxury firms expand in Asia and the Americas, they will continue to suffer currency woes. Most of the industry's production is in the euro-zone, mainly in France and Italy. Even the optimistic Mr Arnault complained at his firm's recent annual meeting that the euro had reached “incomprehensible” levels against the dollar and the yen. Luxury companies could shift more of their production to countries with weaker currencies and cheap labour (ie, China), but some customers—especially Asian customers—want the elitism and craftsmanship associated with products manufactured in Europe.

At least sales in emerging markets are growing fast. But Melanie Flouquet, a luxury analyst at JPMorgan, an investment bank, says that this growth is not enough to offset a slowdown in America. Chinese and Russian consumers account for around 7% and 4% of global luxury sales respectively, compared with 16-18% for Americans. Even so, European firms are sticking to their plans in New York, America's fashion capital. Gucci will open its biggest shop in February in Trump Tower, a shiny skyscraper on New York's Fifth Avenue. Ermenegildo Zegna will also open a shop on Fifth Avenue next year. And this week Dolce & Gabbana re-opened its spruced-up shop on Madison Avenue.

Claudia D'Arpizio of Bain thinks luxury makers need to follow Giorgio Armani and segment their customers more carefully with different product lines at different price ranges. She predicts that the industry will see solid growth rates of up to 10% a year in the near term. This means that the industry could double in ten years—by which time China is likely to account for more than a quarter and maybe as much as a third of the world's consumption of luxury goods. Yet Mr Arnault's rosy prediction seems unlikely to come true. As Americans tighten their purse-strings, over-optimism is a luxury even this industry cannot afford.

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Secondary ticket markets

If you can't beat 'em, join 'em

Dec 6th 2007
From The Economist print edition

Sports teams and musicians want a cut of the ticket-resale market

IT WAS an expensive but instructive paper clip. Earlier this year a Missouri man ostensibly broke the state's anti-ticket-touting law by selling two tickets to a Cardinals-Cubs baseball game for $79 above their face value. When confronted he explained that he had not marked up the ticket price: the $79 purchased a “decorative paperclip” to fasten the tickets. He was neither arrested nor fined. Suppressing ticket touting, known as scalping in America, faces other obstacles. Is a buyer who agrees to buy a ticket from a tout really a victim? After all, it is legal for people to sell almost anything at whatever price the market supports.

Anti-ticket-touting laws in America are rapidly being repealed. This year Connecticut, Minnesota, Missouri, New York and Pennsylvania abolished their laws. Illinois and Louisiana did so last year. Now only five states have anti-touting laws, and they are rarely enforced. Typically, the laws limit a ticket's resale price to a few dollars above its face value—Massachusetts, for example, caps such mark-ups at $2 per ticket. More fundamentally, existing anti-touting efforts are being undercut by the accepted business model of primary-market ticket companies who add “service fees” of far more than $2 that, some believe, constitute legal touting.

Ticket touting is nothing new, but the rise of online ticket-exchanges has expanded the market by making it much easier for sellers and buyers to find each other. Last year the resale market—also known as the secondary market or “aftermarket”—was worth some $2 billion in America and a similar amount in Europe, according to Forrester, a market-research firm. This year ticket resales in America are expected to top $3 billion. Fans like online exchanges because many of them hold money in escrow, giving it to sellers only after the event to ensure that tickets are legitimate.

Sports teams and performers have traditionally missed out on resale profits. But now they are trying to get a piece of the action, by signing revenue-sharing deals with online ticket-exchanges. Event organisers refer ticketless fans to the exchanges, lending them legitimacy in the process. In return, the exchanges share their profits. In August MLB.com, a subsidiary of Major League Baseball, signed a five-year landmark deal with StubHub, America's largest exchange. When the baseball season begins next spring, the 30 MLB clubs will refer ticketless fans to StubHub and receive an undisclosed cut of the resale revenue.

This is a big shift. Last year the New York Yankees and the New England Patriots voided the season tickets of people caught trading on StubHub. The Patriots also sued StubHub. Today StubHub is enjoying “very, very stellar growth”, says its boss, Chris Tsakalakis. It has partnerships with eight National Football League teams, a handful of National Basketball Association teams and more than a dozen NCAA university basketball teams. “The glib explanation is, if you can't beat them, join them,” says Mr Tsakalakis.

Europe's biggest online ticket reseller, viagogo, based in London, this year signed deals with several English football clubs, the Scottish Premier League, lastminute.com (an online travel agency), Warner International Music and several other entertainment companies. In August viagogo launched in America, signing a deal with the Cleveland Browns football team. Viagogo's revenue doubled every quarter this year. “The industry is embracing this,” says Eric Baker, the firm's boss.

Even a company that once legally challenged the online-resale market is now on board. Ticketmaster, the ticketing agency in Los Angeles which sells roughly half of all tickets to big events in America, developed a creative legal argument in a bid to shut down resellers it felt were earning unfair profits on tickets Ticketmaster had originally sold. Buyers, the company argued, should not be able to resell tickets because they don't actually own the tickets in the first place: tickets are merely licences to enter a venue, and licences are not freely transferable. That argument did not prevail, and Ticketmaster now has its own resale subsidiary, TicketExchange. More than 50 professional sports teams have now negotiated a

cut of TicketExchange's resale revenue.

The music industry, which has been hit by falling CD sales, also wants a cut of the concert-ticket resale market. Late this summer Tixdaq, a company in London that sells concert-attendance data to the music industry, and the Music Managers Forum, a lobby in London, formed the Resale Rights Society to negotiate with the estimated 240 companies worldwide that operate online concert-ticket exchanges. Already the group has inked deals with 150 management companies representing more than 400 artists including Peter Gabriel, Robbie Williams, The Verve, Bryan Adams and The Cardigans, says Marc Marot, the head of the new venture, which launched formally on December 4th.

This approach makes sense for all concerned. Exchanges are a more efficient way to segment the market than the crude pricing used by promoters; by teaming up with the exchanges they can get a cut. Tixdaq estimates that last year Britons purchased £100m ($207m) worth of resold tickets; this year the market will top £250m. Paul Oakenfold, a member of the Resale Rights Society and one of the world's highest-paid DJs, says: “If the government is not going to outlaw online ticket resellers, it's time to join in and engage with the secondary marketeers.” It seems to be working.

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Emerging multinationals

They're behind you

Dec 6th 2007 | DELHI
From The Economist print edition

A new report identifies the developing world's most promising multinationals

“WE STARTED out abroad as ‘accidental tourists’,” says Anand Mahindra, managing director of Mahindra & Mahindra, an Indian maker of tractors and off-road vehicles. Owed money by a Greek manufacturing plant, it took an equity stake instead, and so Mahindra Hellenic was born in 1984.

Mahindra & Mahindra is now one of 100 companies from the developing world that Boston Consulting Group (BCG) thinks have the clout and ambition to upset the world's multinationals. The consultants sifted over 3,000 companies from 30 countries, picking firms that had revenues approaching or surpassing $1 billion last year and are expanding overseas aggressively (not accidentally). They measure this expansionism by five criteria, including the firms' international sales and assets, and the money they can tap for foreign raids and acquisitions.

The result is a list that cunningly appeals to the pride of the aspirants and the insecurity of rich-world incumbents. According to *Fortune* magazine, Jeff Immelt sent last year's list to his underlings at General Electric, ordering them to identify the companies it could sell to and buy from, and those it would have to compete with.

Like parvenus everywhere, these emerging multinationals often buy their way into the top ranks. Supported by high share valuations, many have rejected organic growth in favour of bold acquisitions. The 100 firms on BCG's list completed about 70 cross-border deals between them in 2006, seven of which were worth more than $1 billion. India's Suzlon Energy, which builds wind farms, bought REpower of Germany in June, for example, thus combining REpower's offshore-turbine technology with its own cheap components. This year, according to Thomson Financial, firms from developing countries have acquired assets in rich countries worth $171 billion, compared with a previous peak of $52 billion in 1999.

Some of these purchases have looked expensive. But, BCG points out, to this new breed of buyers a target company can appear very different from the way it looks to Western or Japanese eyes. A firm burdened with high costs and a declining domestic market may nonetheless have a brand, customers or know-how that emerging multinationals covet. High costs do not deter them. CIMC, a Chinese firm that makes shipping containers, dismantles entire production lines in expensive countries and rebuilds them back home.

The companies on BCG's list have ventured overseas for different reasons. Sixteen of the 41 Chinese companies on the list are owned by an arm of the government dedicated to managing state assets. They break into foreign markets with the state's help and its say-so. Ten companies (half of them from China) have left home in search of natural resources. And another 17 have sought to cash in on the high price of metals and other commodities.

But some companies simply believe they can be the biggest and best in their industries—China's BYD, for example, is the world's largest maker of nickel-cadmium batteries, and India's Reliance Group makes more polyester fibre and yarn than anyone else. Others have brands, nurtured at home, that they think they can milk in foreign markets. Sadia, for example, is a Brazilian frozen-foods company that has become a household name in the Middle East, helped perhaps by its name's similarity to *sa'ada*, the Arabic word for happiness.

How should incumbent multinationals respond? BCG advises them to fight the developing world's multinationals over there, so they do not have to fight them at home. It points out that the aspirants often move upmarket in their own countries as a prelude to expanding abroad. So if the incumbents can woo affluent customers in emerging Asia, Eastern Europe and Latin America, they may be able to slow the emergence of global rivals. They should also consider acquiring the upstarts before they are unseated

by them, says BCG. But, the consultants point out, few Western multinationals have a mergers-and-acquisitions team in Delhi or Shanghai that can draw up a shopping list. And up-and-coming firms tend to be pricey.

At least incumbents have no excuse for getting caught on the hop. In addition to BCG's list, Columbia University's Programme on International Investment is carrying out a similar exercise, and released a report on Brazil's multinationals on December 3rd. And the phenomenon of emerging multinationals is not as new as you might think. UNCTAD (the United Nations Conference on Trade and Development) points out that Argentina has been producing multinationals at least since Alpargatas, a textile-maker, set up an affiliate in Uruguay—in 1890.

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Face value

The new face of private equity

Dec 6th 2007
From The Economist print edition

The future of a controversial business lies with people such as Antonio Bonchristiano

GP Investments

TODAY, for better or worse, the public face of private equity is Steve Schwarzman. It has been hard to keep the American billionaire out of the news this year: one minute he is paying $1m to have Rod Stewart sing at his 60th birthday party, the next he is giving speeches claiming that private equity is a "force for good". In June he controversially turned his outfit, Blackstone, into a public company, prompting people to ask whether a private-equity firm that lists its shares in a public equity market is undermining its own business model. The private-equity boom then came to an abrupt halt in America, helping to drive down Blackstone's share price by 40% and generating widespread envy about Mr Schwarzman's good timing.

Nobody has accused Antonio Bonchristiano of undermining his business model by taking his company, GP Investimentos, public a year before Blackstone's initial public offering (IPO). Even after recent wobbles, as the woes of the global financial system reached the emerging economies, the shares of Brazil's biggest private-equity firm are trading at nearly three times their IPO price. And whereas Blackstone's IPO was, in part, about creating a way for Mr Schwarzman and other executives to cash out some of their stake in the firm, the money raised by GP was to invest in what Mr Bonchristiano, its co-head, calls a big opportunity for private equity in Brazil and much of Latin America. "None of the money went into our own pockets," he says.

The hiatus in private equity in America and Europe is likely only to accelerate the move already under way within the industry towards the emerging economies. It is a shift that Blackstone is helping to lead, having sold a stake in itself to the government of China. Carlyle, another venerable American private-equity firm, has recently raised a fund to invest in Latin America. Yet increasingly it will be domestic private-equity firms that take the lead and get the best local deals—and it will be Mr Bonchristiano and others like him who succeed Mr Schwarzman as the new faces of private equity.

Still barely in his 40s, Mr Bonchristiano, the son of a lawyer and raised in São Paolo state, combines expertise on Brazil's economy with foreign experience and a global perspective. In his mid-teens he was sent to school in England, and then went on to read politics, philosophy and economics at Oxford. He worked in the City of London for Salomon Brothers, then joined a boutique investment bank that focused on mergers and acquisitions involving Portuguese and Spanish firms. He returned to Brazil in 1993, just as the country was enjoying one of its periodic false economic dawns, and found a job with GP, Brazil's first private-equity firm, which had just been launched by three bankers. In 2003 the founders agreed to sell the firm to Mr Bonchristiano and his co-head, Fersen Lambranho.

The two men operate as genuine co-leaders, sitting next to each other in an open-plan office. Mr Lambranho, in his mid-40s, has more of an operating background and focuses on finding deals, while the polished, multilingual Mr Bonchristiano takes the lead on relationships with foreign partners and fundraising. He has been spectacularly successful. GP has just closed its fourth fund, by far its biggest at $1.3 billion. It was raised exclusively from international investors (40% American, 40% European, and 20% Asian and Middle-Eastern, including one of the suddenly ubiquitous sovereign-wealth funds). Mr Bonchristiano will surely soon be fund-raising again, as already, since July, GP has invested over 40% of the $1.3 billion in three deals.

An awful lot of opportunities in Brazil

International investors are increasingly excited by Brazilian private equity. As well as recognising it as one of the leading emerging economies (or BRICs, along with Russia, China and India), investors have growing confidence that Brazil has finally overcome its macroeconomic instability. Furthermore, private equity in emerging economies such as Brazil tends to focus on growth and operating improvements, and does not rely much on leverage—an advantage at a time of tight credit markets. Better still, there is less competition in private equity in Brazil, compared with other big emerging economies. Mr Bonchristiano says there are about 400 private-equity firms in India, half a dozen in Brazil and half a dozen in the rest of Latin America.

Meanwhile the Brazilian IPO market has become one of the hottest in the world, with around 70 flotations likely this year, up from 24 in 2006 and none in 2003, according to Dealogic. GP has made some lucrative exits, including the IPOs of Gafisa, a homebuilder; Equatorial Energia, an electricity utility, which made GP 33 times its money; and Submarino, a Brazilian equivalent of Amazon. In 1999 Mr Bonchristiano briefly left GP to run Submarino, and successfully navigated the dotcom bubble, not least by tightly controlling spending. GP eventually made ten times its money on its stake in the company.

GP now faces two big tests, Mr Bonchristiano says. The first is to manage growth. It already has 50 staff, including 15 professionals. Its next fund will probably be bigger. It has just opened an office in Mexico, where he sees similar opportunities to Brazil. The second is the “general external environment”, particularly the credit crisis and a potential economic downturn in America. The main reason to go public was to raise “permanent capital” to enable GP to invest in gloomy markets as well as good ones. If there are bad times coming, says Mr Bonchristiano, “we have been there before and survived.” A third test, which he does not mention, will be to compete with Mr Schwarzman and his ilk as the big foreign firms move into Brazil. GP will have the advantage of its local connections, of course. But will that be enough?

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Correction

Dec 6th 2007

Our profile of Jim Goodnight ("Doing well by being rather nice", December 1st 2007) wrongly stated that he co-founded SAS while at the University of North Carolina. We should have said North Carolina State University. Sorry.

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Food prices

Cheap no more

Dec 6th 2007
From The Economist print edition

Gerrit Buntrock

Rising incomes in Asia and ethanol subsidies in America have put an end to a long era of falling food prices

ONE of the odder features of last weekend's vote in Venezuela was that staple foods were in short supply. Something similar happened in Russia before its parliamentary election. Governments in both oil-rich countries had imposed controls on food prices, with the usual consequences. Such controls have been surprisingly widespread—a knee-jerk response to one of the most remarkable changes that food markets, indeed any markets, have seen for years: the end of cheap food.

In early September the world price of wheat rose to over $400 a tonne, the highest ever recorded. In May it had been around $200. Though in real terms its price is far below the heights it scaled in 1974, it is still twice the average of the past 25 years. Earlier this year the price of maize (corn) exceeded $175 a tonne, again a world record. It has fallen from its peak, as has that of wheat, but at $150 a tonne is still 50% above the average for 2006.

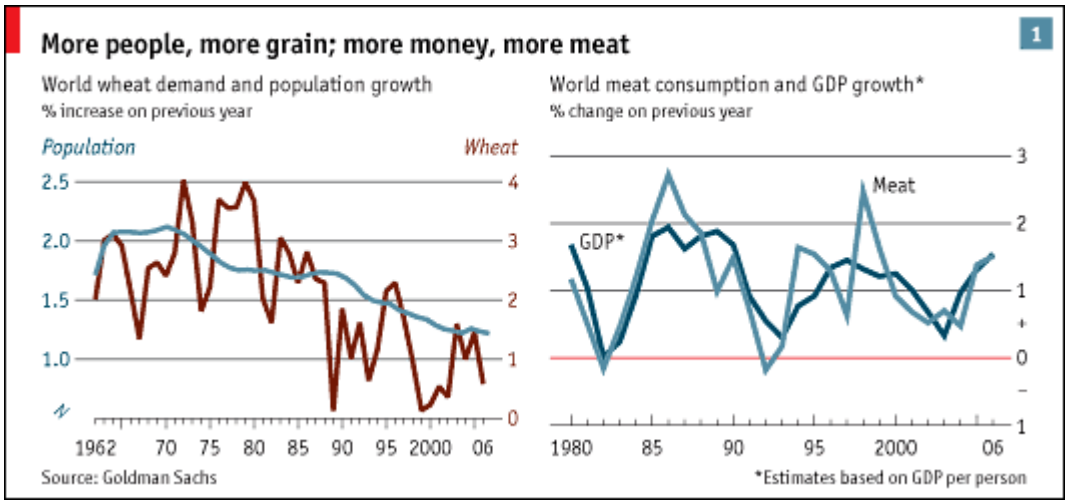
As the price of one crop shoots up, farmers plant it to take advantage, switching land from other uses. So a rise in wheat prices has knock-on effects on other crops. Rice prices have hit records this year, although their rise has been slower. *The Economist*'s food-price index is now at its highest since it began in 1845, having risen by one-third in the past year.

Normally, sky-high food prices reflect scarcity caused by crop failure. Stocks are run down as everyone lives off last year's stores. This year harvests have been poor in some places, notably Australia, where the drought-hit wheat crop failed for the second year running. And world cereals stocks as a proportion of production are the lowest ever recorded. The run-down has been accentuated by the decision of large countries (America and China) to reduce stocks to save money.

Yet what is most remarkable about the present bout of “agflation” is that record prices are being achieved at a time not of scarcity but of abundance. According to the International Grains Council, a trade body based in London, this year's total cereals crop will be 1.66 billion tonnes, the largest on record and 89m tonnes more than last year's harvest, another bumper crop. That the biggest grain harvest the world has ever seen is not enough to forestall scarcity prices tells you that something fundamental is affecting the world's demand for cereals.

The meat of the question

Two things, in fact. One is increasing wealth in China and India. This is stoking demand for meat in those countries, in turn boosting the demand for cereals to feed to animals. The use of grains for bread, tortillas and chapattis is linked to the growth of the world's population. It has been flat for decades, reflecting the slowing of population growth. But demand for meat is tied to economic growth (see chart 1) and global GDP is now in its fifth successive year of expansion at a rate of 4%-plus.



Higher incomes in India and China have made hundreds of millions of people rich enough to afford meat and other foods. In 1985 the average Chinese consumer ate 20kg (44lb) of meat a year; now he eats more than 50kg. China's appetite for meat may be nearing satiation, but other countries are following behind: in developing countries as a whole, consumption of cereals has been flat since 1980, but demand for meat has doubled.

Not surprisingly, farmers are switching, too: they now feed about 200m-250m more tonnes of grain to their animals than they did 20 years ago. That increase alone accounts for a significant share of the world's total cereals crop. Calorie for calorie, you need more grain if you eat it transformed into meat than if you eat it as bread: it takes three kilograms of cereals to produce a kilo of pork, eight for a kilo of beef. So a shift in diet is multiplied many times over in the grain markets. Since the late 1980s an inexorable annual increase of 1-2% in the demand for feedgrains has ratcheted up the overall demand for cereals and pushed up prices.

Because this change in diet has been slow and incremental, it cannot explain the dramatic price movements of the past year. The second change can: the rampant demand for ethanol as fuel for American cars. In 2000 around 15m tonnes of America's maize crop was turned into ethanol; this year the quantity is likely to be around 85m tonnes. America is easily the world's largest maize exporter—and it now uses more of its maize crop for ethanol than it sells abroad.

Ethanol is the dominant reason for this year's increase in grain prices. It accounts for the rise in the price of maize because the federal government has in practice waded into the market to mop up about one-third of America's corn harvest. A big expansion of the ethanol programme in 2005 explains why maize prices started rising in the first place.

Ethanol accounts for some of the rise in the prices of other crops and foods too. Partly this is because maize is fed to animals, which are now more expensive to rear. Partly it is because America's farmers, eager to take advantage of the biofuels bonanza, went all out to produce maize this year, planting it on land previously devoted to wheat and soyabeans. This year America's maize harvest will be a jaw-dropping 335m tonnes, beating last year's by more than a quarter. The increase has been achieved partly at the expense of other food crops.

This year the overall decline in stockpiles of all cereals will be about 53m tonnes—a very rough indication of by how much demand is outstripping supply. The increase in the amount of American maize going just to ethanol is about 30m tonnes. In other words, the demands of America's ethanol programme alone account for over half the world's unmet need for cereals. Without that programme, food prices would not be rising anything like as quickly as they have been. According to the World Bank, the grain needed to fill

up an SUV would feed a person for a year.

America's ethanol programme is a product of government subsidies. There are more than 200 different kinds, as well as a 54 cents-a-gallon tariff on imported ethanol. That keeps out greener Brazilian ethanol, which is made from sugar rather than maize. Federal subsidies alone cost $7 billion a year (equal to around $1.90 a gallon).

In theory, what governments mandate, they can also scrap. But that seems unlikely with oil at the sort of price that makes them especially eager to promote alternative fuels. Subsidies might be trimmed, of course, reducing demand occasionally; this is happening a bit now. And eventually, new technologies to convert biomass to liquid fuel will replace ethanol—but that will take time. For the moment, support for the ethanol programme seems secure. Hillary Clinton and John McCain used to be against ethanol subsidies, but have changed their minds. Russia and Venezuela are not the only countries that like to meddle in food markets for political reasons.

So demand for grain will probably remain high for a while. Demand, though, is only one side of the equation. Supply forms the other. If there is a run of bumper harvests, prices will fall back; if not, they will stay high.

Harvests can rise only if new land is brought into cultivation or yields go up. This can happen fairly quickly. The world's cereal farmers responded enthusiastically to price signals by planting more high-value crops. And so messed-up is much of the rich world's farming systems that farmers in the West have often been paid not to grow crops—something that can easily be reversed, as happened this year when the European Union suspended the “set aside” part of its common agricultural policy. Still, there are limits to how much harvests can be expanded in the short term. In general, says a new report by the International Food Policy Research Institute (IFPRI), which is financed by governments and development banks, the response tends to be sticky: a 10% rise in prices yields a 1-2% increase in supply.

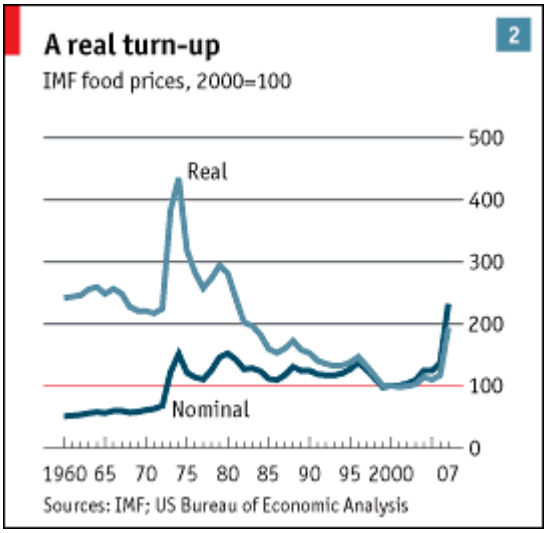
In the longer run, plenty of new farmland could be ploughed up and many technological gains could be had. But much of the new land is in remote parts of Brazil, Russia, Kazakhstan, the Congo and Sudan: it would require big investments in roads and other infrastructure, which could take decades—and would often lead to the clearing of precious forest. Big gains could be had if genetically modified foods were brought into production or if new seed varieties were planted in Africa. But again, that will take time. Moreover, GM foods will not live up to their promise unless they shed the popular suspicion that dogs them, especially in Europe. And some of the new land—dry, marginal areas of Africa, Brazil and Kazakhstan—could be vulnerable to damage from global warming. By some measures, global warming could cut world farm output by as much as one-sixth by 2020. No less worryingly, high oil prices would depress the use of oil-based fertilisers, which have been behind much of the increase in farm production during the past half-century.

It is risky to predict long-run trends in farming—technology in particular always turns out unexpectedly—but most forecasters conclude from these conflicting currents that prices will stay high for as much as a decade. Because supplies will not match increases in demand, IFPRI believes, cereal prices will rise by between 10% and 20% by 2015. The UN's Food and Agriculture Organisation's forecast for 2016-17 is slightly higher. Whatever the exact amount, this year's agflation seems unlikely to be, as past rises have been, simply the upward side of a spike.

If prices do not fall back, this will mark a break with the past. For decades, prices of cereals and other foods have been in decline, both in the shops and on world markets. The IMF's index of food prices in 2005 was slightly lower than it had been in 1974, which means that in real terms food prices fell during those 30 years by three-quarters (see chart 2). In the 1960s food (including meals out) accounted for one-quarter of the average American's spending; by 2005 the share was less than one-seventh.

In other words, were food prices to stay more or less where they are today, it would be a radical departure from a past in which shoppers and farmers got used to a gentle decline in food prices year in, year out. It would put an end to the era of cheap food. And its effects would be felt everywhere, but especially in countries where food matters most: poor ones.

A blessing and a curse



If you took your cue from governments, you would conclude that dearer food was unequivocally a bad thing. About a score of countries have imposed food-price controls of some sort. Argentina, Morocco, Egypt, Mexico and China have put restraints on domestic prices. A dozen countries, including India, Vietnam, Serbia and Ukraine, have imposed export taxes or limited exports. Argentina and Russia have done both. In all these places governments are seeking to shelter their people from food-price rises by price controls. But dearer food is not a pure curse: it produces winners as well as losers.

Obviously, farmers benefit—if governments allow them to keep the gains. In America, the world's biggest agricultural exporter, net farm income this year will be $87 billion, 50% more than the average of the past ten years. The prairie farmers of the Midwest are looking forward to their Caribbean cruises.

Other beneficiaries are in poor countries. Food exporters such as India, South Africa and Swaziland will gain from increased export earnings. Countries such as Malawi and Zimbabwe, which used to export food but no longer do so, also stand to gain if they can boost their harvests. Given that commodity prices have been falling for so long in real terms, this would be an enormous relief to places that have suffered from a relentless decline in their terms of trade.

In emerging markets an income gap has opened up between cities and countryside over the past few years. As countries have diversified away from agriculture into industry and services, urban wages have outstripped rural ones. Income inequality is conventionally measured using a scale running from zero to one called the Gini coefficient. A score of 0.5 is the mark of a highly unequal society. The Asian Development Bank reckons that China's Gini coefficient rose from 0.41 in 1993 to 0.47 in 2004. If farm incomes in poor countries are pushed up by higher food prices, that could mitigate the growing gap between city and countryside. But will it?

Guess who loses

According to the World Bank, 3 billion people live in rural areas in developing countries, of whom 2.5 billion are involved in farming. That 3 billion includes three-quarters of the world's poorest people. So in principle the poor overall should gain from higher farm incomes. In practice many will not. There are large numbers of people who lose more from higher food bills than they gain from higher farm incomes. Exactly how many varies widely from place to place.

Among the losers from higher food prices are big importers. Japan, Mexico and Saudi Arabia will have to spend more to buy their food. Perhaps they can afford it. More worryingly, some of the poorest places in Asia (Bangladesh and Nepal) and Africa (Benin and Niger) also face higher food bills. Developing countries as a whole will spend over $50 billion importing cereals this year, 10% more than last.

Rising prices will also hurt the most vulnerable of all. The World Food Programme, the main provider of emergency food aid, says the cost of its operations has increased by more than half in the past five years and will rise by another third in the next two. Food-aid flows have fallen to their lowest level since 1973.

In every country, the least well-off consumers are hardest hit when food prices rise. This is true in rich and poor countries alike but the scale in the latter is altogether different. As Gary Becker, a Nobel economics laureate at the University of Chicago, points out, if food prices rise by one-third, they will reduce living standards in rich countries by about 3%, but in very poor ones by over 20%.

Not all consumers in poor countries are equally vulnerable. The food of the poor in the Andes, for example, is potatoes; in Ethiopia, teff: neither is traded much across borders, so producers and consumers are less affected by rising world prices. As the World Bank's annual *World Development Report* shows, the number of urban consumers varies from over half the total number of poor in Bolivia, to about a quarter in Zambia and Ethiopia, to less than a tenth in Vietnam and Cambodia.

But overall, enormous numbers of the poor—both urban and landless labourers—are net buyers of food, not net sellers. They have already been hard hit: witness the riots that took place in Mexico over tortilla prices earlier this year. According to IFPRI, the expansion of ethanol and other biofuels could reduce calorie intake by another 4-8% in Africa and 2-5% in Asia by 2020. For some countries, such as Afghanistan and Nigeria, which are only just above subsistence levels, such a fall in living standards could be catastrophic.

So it is no good saying “let them eat cake”: there are strong welfare arguments for helping those who stand to lose. But the way you do it matters. In general, it is better to subsidise poor peoples' incomes, rather than food prices: this distorts price signals the least and allows farmers to benefit from higher prices. Where it is not possible to subsidise incomes (because to do so requires a decent civil service), it is still possible to minimise the unintended consequences if food subsidies are targeted and temporary. Morocco fixed bread prices (the food of the poor) during Ramadan, the Muslim month of fasting; at the same time, it cut tariffs on food imports to increase competition.

In contrast, Russia shows how not to do it. It imposed across-the-board price controls on milk, eggs, bread and other staples, benefiting everyone whether they needed help or not. Food is disappearing from shelves and farmers are bearing the brunt. As Don Mitchell of the World Bank points out, “if you want to help consumers, you can do it without destroying your producers but only if you go about it in the right way.” In reality, many of the recent price controls are blatant politicking. About half the countries that imposed price controls did so before elections or other big political events. Russia's are due to run out just after next year's presidential election. Funny, that.

AP

But a problem too

There is one last important knock-on effect of agflation. It is likely to help shift the balance of power in the world economy further towards emerging markets. Higher food prices have increased inflation around the world, but by different amounts in different countries. In Europe and America food accounts for only about one-tenth of the consumer-price index, so even though food prices in rich countries are rising by around 5% a year, it has not made a big difference. There have been clucks of concern from the European Central Bank and a consumer boycott of pasta in Italy, but that is about all.

In poor countries, in contrast, food accounts for half or more of the consumer-price index (over two-thirds in Bangladesh and Nigeria). Here, higher food prices have had a much bigger impact. Inflation in food prices in emerging markets nearly doubled in the past year, to 11%; meat and egg prices in China have gone up by almost 50% (although that is partly because pork prices have been pushed up by a disease in pigs). This has dragged up headline inflation in emerging markets from around 6% in 2006 to over 8% now. In many countries, inflation is at its highest for a decade.

Central bankers are determined to ensure that what could be a one-off shift in food prices does not create continuing inflation by pushing up wages or creating expectations of higher prices. So they are tightening monetary policy. China increased interest rates in August, Chile in July, Mexico in May. The striking thing about these rises is that they are the opposite of what has been happening in some rich countries. The Federal Reserve reduced rates by 50 basis points in September and 25 points in October; the Bank of Canada cut rates this week. The indirect effect of food-price rises has therefore been to widen the interest-rate differential between rich and emerging markets.

And all this is going on as the economic balance of power is shifting. Growth in America and Europe is slowing; China and India are going great guns. Financial confidence in the West has been shaken by the subprime-mortgage crisis; capital flows into emerging markets are setting records.

This shift will be tricky to handle. Such transitions always are. The risk is of a bubble in emerging markets. As Simon Johnson, the IMF'S director of research, wryly notes, “every bubble starts with a change in the real economy.” Food markets are an obvious place to start. How emerging countries fare—and how poor consumers cope—depends on their economic policies. The imposition of food-price controls was not exactly a good start.

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Chinese IPOs

Peaking

Dec 6th 2007 | HONG KONG
From The Economist print edition

Illustration by Satoshi Kambayashi

Darker days for new listings on China's stockmarkets

BY NORMAL standards, investors in Chinese shares ought to be ecstatic. Over the past 12 months prices on the Hong Kong, Shanghai and Shenzhen stock exchanges have leapt by 45%, 83% and 132% respectively. This remarkable performance has been propelled by a convoy of new offerings—some genuine stockmarket debuts, others selling mainland investors the shares of companies already listed elsewhere. In 2007 about $90 billion will be raised from these initial public offerings (IPOs) in China, almost as much as in New York and London combined. A vast pool of liquidity has been created even as the rest of the world has become parched. Yet the mood is darkening.

Of the 15 largest offerings to have debuted on the mainland exchanges this year, the share prices of eight are below their first-day close. The most vivid example of the market's gloom was once the most vivid example of its elation. PetroChina, an energy producer, became the most valuable company in the world when its shares more than doubled on its November 5th debut in Shanghai. Since then, its shares have dropped in value by a third and PetroChina has become shorthand for a sucker's trade among angry Chinese punters. More recently, Sinotruk and Sinotrans Shipping also fell below their opening prices on the day of listing, shocking retail investors who had fought for shares in the certain knowledge that every offering could only go up.

Burned by such failures, potential buyers on the secondary market are becoming less willing to take shares off “stock flippers”, speculators who purchase shares in an IPO and sell them as soon as they start trading. China Railway saw its shares rocket by 69% when they listed on December 3rd, but even that spectacular success has not been enough to shake off the gathering disenchantment with new offerings.

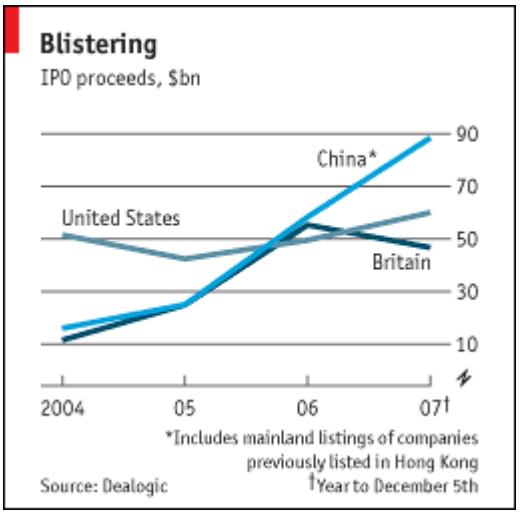
Primary colours

Analysis by JPMorgan, an investment bank, shows that Hong Kong-listed companies that announce plans to list in mainland China witness an increase in the price of their Hong Kong shares, suggesting that the primary market is still attractive. But once the mainland offering takes place, price movements become random: the secondary market is not a good buy. If the after-listing market for shares dries up and there is no one to flip to, the primary market may evaporate as well.

That leaves lots of companies with a headache. More than 60 Chinese firms in a range of industries are thought to be near enough to issuing shares to have appointed underwriters, prepared documents and begun tentatively to market themselves to investors. Potentially gargantuan mainland offerings by China Mobile, a telecoms company, and CNOOC, another oil firm, are also expected, but not yet in train.

Many firms are continuing their marketing, but are having trouble building order-books. Only a few weeks ago, such companies were overwhelmed by investor demand. Now deals are quietly being delayed, to spare clients the embarrassing impression that a potential offering is in anything less than high demand. Xiashun Holdings, an aluminium-foil maker, has formally postponed its offering. There is, says one hedge-fund manager, “massive indigestion.”

A slowdown in IPO activity has been accompanied by a fall in the broader stockmarket indices. The Shanghai and Shenzhen exchanges are both 19% below their October highs; the Hong Kong index has dipped by 9%. Admittedly, those are small falls set against the year's gains, but a protracted decline in the Chinese markets will have ripple effects. The Asian operations of many banks and hedge funds have sold “pre-IPO” stakes in a lot of companies. The health of that market will be in doubt if deals fall short of expectations. So too will be the accuracy of the valuations such stakes command on investment firms' balance-sheets. One market participant says they are responsible for large reported profits that could yet turn into write-downs.



More broadly, the Hong Kong and mainland stockmarkets have been a source of liquidity in a credit-crunched world. The money raised on China's capital markets has provided mainland companies with cash for a global shopping spree. Billions of dollars sit idling on the balance-sheets of energy and mining companies (it is this money that fuels the growing speculation that China's steel companies may top BHP Billiton's takeover bid for Rio Tinto, a mining giant). If funding conditions in developed markets stayed tight, China would gain formidable advantages from an IPO market that is healthy enough to provide large amounts of cash.

Worrywarts will also wonder if a stockmarket slowdown indicates that investors are sceptical about China's ability to escape the effects of financial turbulence elsewhere in the world. But there is an upside to the dampening in demand: namely, that listings now seem likely to undergo closer scrutiny. The trend-bucking success of the China Railway offering may reflect the fact that it is one of the few recent listings to make business sense. China's transportation network is groaning under large and growing demand from its booming factories. Fresh capital will help China Railway to build new capacity.

Such logic has been surprisingly rare among recent deals. In a bubble market business plans and elaborate “use of proceeds” sections on offering documents are superfluous. As painful as it may seem, it will be China's good fortune if this sort of detail now becomes an essential ingredient of stockmarket success.

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Buttonwood

Profits without honour

Dec 6th 2007
From The Economist print edition

Corporate America's long winning streak is over

THE PROFIT miracle is over. Ever since the fortunes of corporate America hit their nadir in 2002, when Enron and WorldCom collapsed, profits have grown at a double-digit percentage rate. Analysts have repeatedly been forced to revise their earnings estimates higher. Not any more. In the third quarter, depending on whether you trust the numbers of Morgan Stanley or Merrill Lynch, the profits of S&P 500 companies were down by 2.8% or 8.5% respectively on the previous year.

Optimists might argue that the third-quarter numbers were distorted by the problems of the banking industry and the huge write-downs taken by the likes of Citigroup and Merrill Lynch. But the numbers above are based on operating earnings, which do not include write-downs. According to David Rosenberg of Merrill Lynch, the *reported* earnings numbers plunged by 28%.

This reversal has come at a time when American companies are performing better than ever on the international stage. Thanks to the lower dollar and a booming global economy, the profits of American subsidiaries are soaring. Joseph Quinlan of Bank of America says that the overseas earnings of American companies in the third quarter were 20% higher year on year, the 21st consecutive quarter that they had increased at a double-digit pace. As a result, international profits now make up 31.5% of the total, up from just 21.6% in the fourth quarter of 2002.

Given that boost from abroad, the third-quarter domestic numbers were clearly dreadful. Apart from the banks, there was a big hit to those industries lumped together as “consumer discretionary”, a group that includes carmakers, producers of consumer durables (such as furniture) and retailers. As the latest survey of consumer confidence suggested, American shoppers are feeling the pinch from the weak housing market and higher petrol prices. (It may seem surprising that energy companies' profits also fell, but that reflects a difficult year for their refining businesses and came after remarkable earnings in 2006.)

History suggests that a turn in the profit cycles has a big effect on earnings. This is because of many companies' “operating leverage”: they have high fixed costs, so extra revenue is passed straight through to the bottom line. Conversely, when revenues start to fall, companies can be slow to cut costs in response.

But this time analysts are forecasting that profits will rebound remarkably quickly. The consensus is that earnings will grow by 14% in 2008, with every single sector managing an advance. In the first half of the year, when many economists think that America will be dicing with recession, analysts are forecasting that corporate profits will be growing at an annual rate of 9%.

Going by experience, profits start to fall when the annual rate of economic growth falls below 1.5%. “Consensus forecasts for next year's US profit growth border on the hallucinatory,” says Tim Bond of Barclays Capital. “Even allowing for the typical bullish bias, the prevailing consensus suggests that equity analysts are collectively reading their spreadsheets upside down.”

In part, analysts' optimism reflects the belief that financial profits will soon return in spite of this year's mortgage-induced losses. Certainly, you would not expect the same level of write-downs in 2008 on structured products (like the now infamous collateralised-debt obligations). But with both lending growth and the economy slowing, you would expect defaults to increase next year along with banks' bad-debt provisions.

Even the weaker dollar is a distinctly mixed blessing for companies. It may help exporters and firms with overseas operations, but it means higher costs for those companies with overseas suppliers—costs they will probably be unable to pass on to struggling consumers.

The big question is not whether 2008 profit estimates will have to be revised down; they almost certainly will. It is whether this shift marks a short-term cyclical setback or something more structural as profits retreat from the 40-year-high share of economic output that they notched up in 2006.

The optimists argued that profits could stay high because the balance of power had moved in favour of capital and away from labour, thanks to the globalisation of the workforce. But perhaps profits had been boosted by accommodating monetary policy, a credit boom and the associated surge in asset prices. In other words, financial services may have dragged the rest of corporate America up. If the credit crunch has a long-lasting effect, the banks may end up dragging corporate America back down again.

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Money-market funds

Freezing in Florida

Dec 6th 2007 | NEW YORK
From The Economist print edition

State investment pools rue their brush with structured finance

ANOTHER week, another new and unlikely type of victim in the subprime-mortgage mess. As if the pounding received by banks, hedge funds, homebuilders, bond insurers and even discount brokers was not enough, the pain is spreading to usually sleepy corners of local government, thanks to state cash-management funds that were not quite as safe and liquid as advertised.

The fund at the centre of the latest debacle is Florida's Local Government Investment Pool (LGIP), which is used by the state's schools and municipalities for short-term investing and routine expenditures. Hungry for extra yield, it gobbled up several billion dollars of debt issued by structured investment vehicles (SIVs), which have investments in subprime mortgages and other asset-backed nasties that have won them pariah status.

Once the extent of this exposure emerged last month, and as rating agencies hastened their downgrading of SIV borrowings, nerves frayed. Panicky investors had pulled out $13 billion, nearly half of the fund's assets, by the time state officials stepped in to freeze withdrawals on November 29th. This set off a firestorm of protest from school and municipal officials, who suddenly found themselves short of money to pay staff or utility bills.

On December 4th Charlie Crist, the state's governor, approved a rescue plan forged with help from BlackRock, an investment firm. In an echo of the Treasury-backed rescue fund for SIVs, which is still being pieced together by Citigroup and other banks, the troubled assets, which BlackRock says are of “indeterminate” value, are being hived off into a distressed fund. The unblemished bit, 86% of the total, was poised to reopen, at least partially, on December 6th. Both parts will be managed by BlackRock until an outside manager is appointed.

The fiasco invites comparisons with California's Orange County, which was responsible for America's largest municipal bankruptcy in 1994 after losing $1.6 billion through ill-advised derivatives trades. In both cases, state-employed neophytes were seduced by complex products peddled by Wall Street—which is again likely to be hit with lawsuits as a result—and failed to appreciate the enhanced risks that come with enhanced returns. Unlike Orange County, however, Florida is no isolated case. More than two dozen American states, including Montana, Maine and Connecticut, run similar investment pools. Nine of them have direct investments in shaky SIVs, as do many county-level funds (including, once again, red-faced Orange County's). Several have seen withdrawals, though not on the same scale as Florida. Municipalities overseas, from Norway to Australia, have also been caught out. Arthur Levitt, former head of the Securities and Exchange Commission, is urging states to step in and guarantee their investment pools.

All of which raises fresh questions about the more than $3 trillion parked in privately managed money-market funds. Considered ultra-safe before the credit crunch, even some of the best-run funds have shown signs of weakness as credit ratings have been revised. In more than two dozen cases, managers have had to shore up such funds to ensure they do not “break the buck”, causing investors to lose money. Despite all the hoopla, most investors are likely to get their money back, even from funds that dabbled in SIVs. Because the funds are short-term investors, they have been able to reduce their exposure to such vehicles quickly—by 40% in the two months to November, reckons Standard & Poor's, a rating agency. Most SIVs are still honouring their debts.

Peter Crane, publisher of *Money Fund Intelligence*, argues that those who flee money-market funds for treasury securities are compounding the damage, because losses in forgone yield will, by and large, outweigh gains in terms of safety. For most short-term cash vehicles, “this is more of a headlines crisis than a real credit crisis,” he says. Try telling that to the school principals in West Palm Beach.

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Global house prices

Run down

Dec 6th 2007
From The Economist print edition

America's housing malaise is slowly spreading

AMERICA'S housing market is on its sickbed. Sales of lived-in houses fell by more than a fifth in the year to October. The backlog of unsold single-family homes has risen to 10.5 months of sales, the highest for 22 years. And despite a sustained fall in housebuilding, there is still more than eight months' supply of new homes yet to be sold.

Prices are the best gauge of vitality and the American market looks either sickly or critically ill depending on who takes its temperature. The price index from OFHEO, the watchdog of Fannie Mae and Freddie Mac, the government-sponsored mortgage lenders, shows that year-on-year prices were 1.8% higher in the third quarter—the weakest rise in 12 years, but a rise all the same. However, that measure misses sales above the $417,000 limit for regulated home loans, where prices were frothiest, as well as deals backed by subprime mortgages, where financing is now moribund.

The S&P/Case-Shiller index is a much broader measure and captures the house-price cycle rather better than the OFHEO gauge. It shows that national prices fell by 4.5% in the year to the third quarter, the biggest drop since the series started in 1987. Prices are falling even faster in large cities, according to S&P/Case-Shiller's more timely monthly index.

Further price declines seem likely given the toxic mix of blighted mortgage markets and swollen inventory. Less certain is whether the rest of the world will catch America's property flu. *The Economist's* quarterly round-up of global house prices suggests that American sneezing has already induced a few sniffles in other rich countries, but that emerging economies have so far proved immune.

***The Economist's* house-price indicators**

% change

	Latest	Q3 2006	1997-2007
	on a year earlier		
Singapore	27.6	7.5	na
South Africa	13.6	14.4	393
New Zealand	12.7	10.4	123
Sweden	11.6	12.0	149
Hong Kong	11.3	-1.0	-36
Australia	10.6	10.1	159
China	9.5	5.5	na
Britain	6.9	7.0	213
France	6.8	11.1	144
Canada	5.8	12.4	78
Belgium	5.7	12.4	131
Spain	5.3	9.8	190
Italy	5.1	6.2	102
Denmark	4.0	21.6	128
Netherlands	3.8	5.3	102
Switzerland	2.3	2.0	19
United States *(OFHEO)*	1.8	7.5	102
Japan	-0.7	-2.8	-32
Ireland	-2.8	15.3	240
Germany	-4.1	-1.0	na
United States *(Case-Shiller national index)*	-4.5	3.2	116
United States *(Case-Shiller ten-city index)*	-5.6	5.3	165

Sources: ABSA; ESRI; Hypoport; Japan Real Estate Institute; Nationwide; Nomisma; NVM; OFHEO; Quotable Value; Stadim; Swiss National Bank; Standard & Poor's; government offices

Property markets in many parts of Europe have passed a turning-point. House-price inflation has dipped in France, Spain, Italy and Belgium. In Germany, where property values have been mostly falling since the mid-1990s, price declines have intensified over the past year. Ireland's long housing boom has turned to bust. Prices fell by almost 3% in the 12 months to September; a year earlier, house-price inflation was above 15%.

There are ominous signs of a downturn in Britain, too. Prices were nearly 7% higher in November than a year earlier, according to our preferred measure. But this still-healthy annual increase disguises a more worrying recent trend. Prices dropped by 0.8% from October, the biggest one-month decline since 1995. Data published by Halifax, Britain's biggest mortgage-lender, show that prices have fallen in each of the past three months, the worst streak for 12 years. The number of mortgages granted to homebuyers has tumbled by one-third since last year's peak.

How much the weaker trend across Europe owes to the credit squeeze is not clear. Banks reeling from credit-related losses are less willing and able to supply new mortgages. But demand for home loans was wilting even before the credit crisis, because of tighter monetary policy. Housing markets in some emerging economies, meanwhile, seem entirely unaffected. House-price inflation in South Africa remains in double digits. In Asia property values have picked up smartly in Singapore, Hong Kong and China.

Even Japan looks a bit less depressed.

This divergence in global housing market trends is welcome support for the theory of “decoupling”, the idea that the fates of the world's economies are less tied to America than they once were. It is not just emerging markets that are following a different path. In Australia and Sweden, where house prices are still rising rapidly, central banks raised their benchmark interest rates even after the Federal Reserve started to cut rates in America. But in much of the rich world, house prices have moved in tandem over the past decade. Now that America's housing market is so poorly, the fear of infection elsewhere is spreading like a bad case of the flu.

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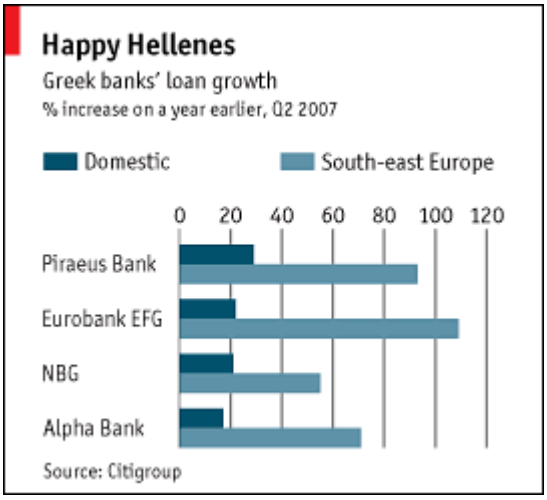
Greek banks

Sunnier climes

Dec 6th 2007
From The Economist print edition

A less crunched corner of Europe



HAPPY bank shareholders are a rare breed in Europe this year, but the industry can still point to some pockets of contentment. Greek banks have outperformed their euro zone brethren, notching up impressive gains in revenue, profit and share prices. Reporting quarterly results, a painful experience elsewhere, has by and large been a pleasant task. National Bank of Greece (NBG) boasted a 66% year-on-year increase in net profit for the first nine months of the year; Eurobank EFG saw earnings grow by 29% in the same period.

Immaturity, in various forms, explains their success. Greek banks have little direct exposure to the subprime-related instruments that have tripped up sophisticates in other markets. The domestic market, although decelerating, still has plenty of scope for growth, thanks to generally benign economic prospects and comparatively shallow levels of private credit, which is expanding by about 20% annually. “Greece is somewhere in between a mature and an emerging market,” says Nicholas Nanopoulos, Eurobank's boss.

The countries that fringe Greece are more dynamic still: Bulgaria and Romania are expected to post loan growth of 50% this year, for example. Greek banks have not only built up sizeable retail operations in nearby Balkan markets, but are also busily planting flags in further-flung bigger markets such as Turkey and Ukraine. Both NBG and Eurobank have more branches in south-eastern Europe than in Greece itself. Finansbank, NBG's Turkish franchise, will account for around 30% of NBG's earnings this year alone. Eurobank expects to derive more than a third of its profits from its regional activities in 2010, up from an expected 7% this year.

The credit crunch is not passing by without a trace, however. A drawn-out seizure in the credit markets would harm the banks' growth prospects: although overall loan-to-deposit ratios for Greek banks are relatively low, their dependence on wholesale funding has increased over the past couple of years. The effects of a global economic slowdown would ripple into south-eastern Europe. Economics aside, political risk still clouds the outlook in the Balkans and beyond.

But there is no shortage of optimism. The bigger banks' extensive retail networks provide a useful hedge against liquidity problems in capital markets. Capital ratios at Greek banks are high, enabling further acquisitions in the surrounding region: Piraeus Bank submitted an offer to buy Kreditprom, a Ukrainian bank, last month. And yet, once the dust settles, Greek banks are themselves likely to become targets for predators: there are few other ways to gain a substantial presence in Europe's most promising markets.

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Risk management

Put out

Dec 6th 2007
From The Economist print edition

The risks posed by CDOs should have been familiar to Wall Street's finest

HOW did bankers so misunderstand their own creations? The Frankensteins of Wall Street thought they had protected themselves from harm by holding only the safest slices of collateralised-debt obligations (CDOs), enticingly known as “super senior” tranches, while selling the riskier bits to other investors. A report issued this week by JPMorgan, an investment bank, estimated that banks alone held around $216 billion worth of super senior tranches of CDOs backed by assets such as mortgages and issued over the past two years. It now expects losses on these tranches to be “immense”.

The super senior tranches did have some attractions for banks. They protected investors from initial losses on the mortgages backing the CDOs, while offering better returns than bonds with a similar rating. But as Erik Sirri, a senior official at the Securities and Exchange Commission pointed out in a speech on November 28th, other forces were at work too. Many banks got rid of the riskier and more junior CDO tranches, because their own risk-management systems designated them as too dangerous. By offering better returns on these riskier slices in order to attract investors, they had to lower the yields on the super senior tranches (since the overall cash flows from the assets backing a CDO are fixed). That made it harder to find buyers for the super senior tranches and forced many banks to keep them on their own books instead.

As the banks offloaded the junior CDO tranches and kept the safer ones, the risks they were exposed to became less obvious. But that does not mean they should have been missed. As Mr Sirri points out, the dangers inherent in super senior tranches of CDOs were similar to those in put options, instruments that have been around in financial markets for decades and entail risks that are well understood. Put options are a form of insurance that allow investors to sell an asset to the “insurer” at a set price (the “strike” price) at an agreed time in the future. A put option is to a CDO what a horse-drawn carriage is to a Ferrari. There are big differences between put options and super senior CDO tranches: most obviously, options are widely traded on exchanges whereas CDOs are notoriously illiquid. Even so, there are some striking parallels.

When markets are booming, or even just stable, selling “out-of-the-money” put options, with a strike price far below the current market price of the asset, is a route to easy money. Since such options expire without being exercised (because the investor can sell the asset in the market for a better return), the money goes straight to the bottom line.

The problem comes when the market crashes and prices drop below the strike price of the option. When that happens, the insurer can suddenly find itself facing huge losses that can not only wipe out the premiums earned in good times, but also cut into its capital as well. Put options are so dangerous because when markets are volatile, their riskiness does not rise steadily, but spikes very sharply within a very short space of time. An insurer that had thought itself well protected can suddenly find the vultures circling. During the sterling crisis of 1992, when the pound dropped out of the exchange-rate mechanism, one expert estimated that option sellers would have made losses even if they had hedged themselves every hour. To make matters worse, liquidity tends to disappear during times of turmoil, making it hard, if not impossible, to shed risk.

Aware of these flaws, most banks and fund managers avoid selling more than a small number of such instruments. But as Mr Sirri points out, “the risk profile of an out-of-the-money put can be manufactured in many different ways through a wide and ever-growing variety of instruments.” A whole range of products, from bonds to super senior tranches of CDOs exhibit this same property of yielding steady (if unspectacular) returns in good times, and then going quite horribly wrong in bad ones. That is dangerous—like picking up coins in front of a steamroller. The risks are especially great given that extreme events seem to occur more often than standard statistical theory suggests they should.

The bewitching thing about financial innovation is its novelty and its complexity. But when the next crisis

comes, its roots will almost certainly lie in some vulnerability that is as old as finance itself.

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Underground markets

Half-cocked

Dec 6th 2007
From The Economist print edition

America's illicit gun-market is surprisingly inefficient

Get article background

AS AMERICANS digest the news of another gun atrocity, a mall shooting in Nebraska on December 5th, they cannot be blamed for thinking that guns are in too ready supply. But an article in the latest *Economic Journal** suggests that the demand for illegal guns, at least, is not met as easily as people might fear. Sudhir Venkatesh, now of Columbia University, has talked to 132 gang-members, 77 prostitutes, 116 gun-owning youths, 23 gun-dealers and numerous other denizens of Chicago's Grand Boulevard and Washington Park neighbourhoods. He did not find many satisfied customers.

Chicago has unusually tough restrictions on legal handguns. Even so the black market is surprisingly "thin", attracting relatively few buyers and sellers. The authors reckon that the 48,000 residents of the two neighbourhoods buy perhaps 1,400 guns a year, compared with at least 200,000 cocaine purchases. Underground brokers sell guns for $150-350, a mark-up of perhaps 200% over the legal price. They also demand a fee of $30-50 for orchestrating the deal. Even then, 30-40% of the transactions fall through because the seller cannot secure a gun, gets cold feet or cannot agree on a location for the deal.

Buyers also find it hard to verify the quality of the merchandise. They often know little about the weapons they covet. "Tony", who owns a .38 calibre handgun, learnt how to use his weapon by fiddling with it. He even put a stone in it. "Did it fire?" Mr Venkatesh asked. "I'm not sure. I think it did," Tony said.

Fortunately for Tony and his peers, their rivals and the victims of crime cannot tell if their guns work any better than they can. Often, showing the "bulge" is enough to gain the respect of rival gangs. In robberies brandishing the weapon will usually do. Storekeepers do not wait for proof that it works.

Markets can overcome thinness, the paper says; they can also overcome illegality. But they cannot overcome both. A thin market must rely on advertising or a centralised exchange: eBay, for example, has dedicated pages matching sellers of imitation pearl pins or Annette Funicello bears to the few, scattered buyers that can be found. But such solutions are too cumbersome and conspicuous for an underground market. The drugs market, by contrast, slips through the law's fingers because of the natural density of drug transactions. Dealers can always find customers on their doorstep, and buyers can reassure themselves about suppliers through repeated custom. There are no fixed and formal institutions that the police could easily throttle.

Indeed, the authors argue that the gun market may be threadbare partly because the drug market is so plump. Gang-leaders are wary of gun-dealing because the extra police scrutiny that guns attract would jeopardise their earnings from coke and dope. Even Chicago's gang-leaders have to worry about the effect of crime on commerce.

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* "Underground Gun Markets", by Philip Cook, Jens Ludwig, Sudhir Venkatesh and Anthony Braga.

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Economics focus

Subprime solutions

Dec 6th 2007
From The Economist print edition

The promise and pitfalls of the Treasury's plan for mortgage-loan modifications

IS HANK PAULSON repairing America's mortgage markets or wrecking them? That question may sound churlish as the treasury secretary scrambles to stop the subprime mortgage mess dragging the economy into recession. But the palliatives that politicians produce today will shape tomorrow's system of mortgage finance. And with the Treasury now cajoling lenders into modifying whole swathes of subprime mortgages, policymakers are at something of a crossroads.

Mr Paulson's attitude to the subprime mess has, to put it charitably, evolved over the past few months. Half a year ago, he was firmly hands-off. The market should be left well alone, to shake out weak subprime borrowers and imprudent lenders. By the end of the summer, with credit markets in turmoil and Democratic politicians demanding help for beleaguered homeowners, Mr Paulson had changed tack. Prudent subprime borrowers—those who were in a house they might reasonably afford, but who had missed payments because their mortgages had reset to higher interest rates—should be brought into the orbit of government-sponsored lending by expanding the Federal Housing Administration (FHA), a Depression-era outfit that insures mortgages for poorer people. The initiative was modest; the direction was clear. The federal government would help a subset of subprime borrowers and use its own institutions to do so.

The Treasury has now embarked on a third approach. Worried that the avalanche of resetting subprime mortgages (some 2m in the next 18 months) would bring a surge of foreclosures and further weaken house prices, Mr Paulson has prodded lenders and mortgage servicers to come up with “an aggressive, systematic approach” to get “able” borrowers into modified loans.

The details of his proposal had not been announced as *The Economist* went to press. But the broad thrust was clear. Mortgage-holders would be divided into groups: those who could afford to pay their resetting mortgages (who would not get help); those who were in homes they plainly could not afford (who would not get help either); and in the middle those deserving borrowers who could service their loan, but not at the resetting rates. Some would refinance into mortgages under the government's umbrella; others ought to have their loans modified, probably by freezing the introductory interest rates for a period of five years. Mr Paulson has made it clear that his new strategy will not involve public money. This is less a bail-out than a soft cram-down (a reduction in the amount of debt owed to creditors). Subprime lenders are being coaxed into agreeing on a system for loan modification en masse.

The Treasury claims that the plan will produce winners all round. That is because the costs of foreclosure are high—typically around 25% of the value of the typical subprime mortgage. Lenders may take modest losses from, say, extending the period of lower interest payments yet still do better than if they pushed borrowers into foreclosure. But that begs an obvious question: if loan modification is such a win-win solution, why does the government need to get involved at all?

One reason to step in is that the Treasury solves a co-ordination problem. All lenders would be better off if a downward price spiral from unnecessary foreclosures could be prevented. Individually, however, each mortgage servicer might prefer foreclosing now, rather than waiting and possibly seeing the value of his asset fall. A second argument is that government involvement offers mortgage servicers some legal protection against investor lawsuits by, in effect, creating an industry standard for loan modification.

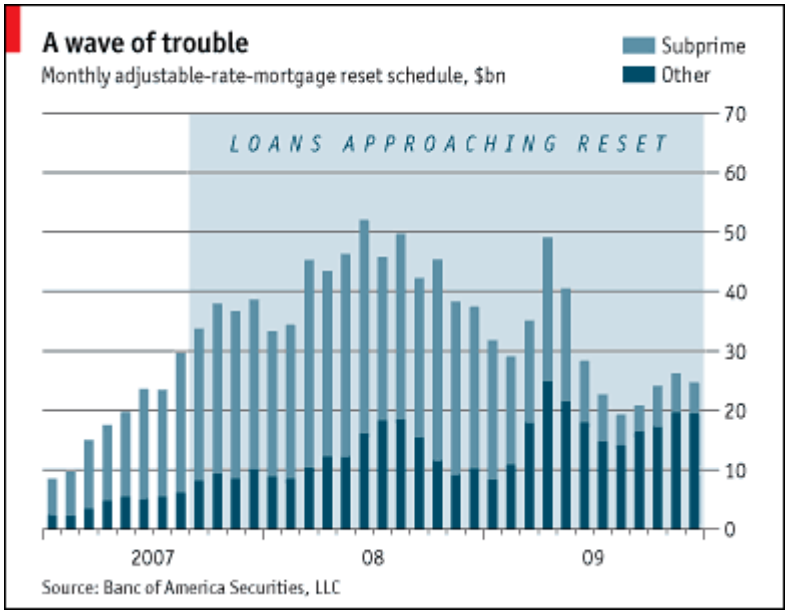
Home truths

But set against those gains are some risks. One is that the plan simply prolongs the subprime mess. Modifying a loan does not eliminate the risk of default later on, particularly when house prices are weak—and may become weaker still. Since the Paulson plan includes only a subset of borrowers, it will have a

modest effect on overall foreclosures, and on resulting downward pressure on prices. And weak prices mean higher defaults: a new paper by economists at the Federal Reserve Bank of Boston suggests that defaults by subprime borrowers are extremely sensitive to home prices, far more so than to other shocks, such as losing a job. If prices continue to fall, in other words, loan modification simply puts off the inevitable.

A second worry is that the plan is a form (albeit a gentle one) of government meddling in private contracts, one that could have far-reaching consequences for investors' willingness to hold future subprime debt. America's debt markets will be permanently damaged if investors fear that government will simply change the rules to suit the times. Plenty of international evidence suggests that the depth of financial markets does indeed depend on the strength of creditor rights. For the moment, though, that worry is probably overblown. In spite of the moral suasion to sign up to an overall set of standards, there will be no explicit government compulsion to do so. Mortgage servicers will ultimately do what is in their investors' “best interest”.

All of which suggests the plan's impact will probably be modest. It may rationalise the process of dealing with interest-rate resets, but it will not change the contours of the subprime bust. That might mean more changes in government policy. Politicians will want more to be done to stop foreclosures rising in an election year. Pressure will build either for bail-outs (probably through greater use of government agencies such as the FHA) or for tougher cram-downs. Democrats in Congress, for instance, want to rewrite the personal bankruptcy laws to include mortgages among the liabilities that a judge can reduce. Mr Paulson has now stuck out a toe in both directions. The future of America's mortgage markets depends on which way he steps next.



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Consumer genomics

Taking your genes in hand

Dec 6th 2007
From The Economist print edition

Personal genetic testing is advancing rapidly. But beware of overselling

GENETIC testing promises a lot. In particular, it promises to tell people things ranging from their risks of developing ailments as diverse as heart disease, cancer and autism to how much coffee they can safely drink. It also promises a lucrative market for those doing the testing. Single-gene tests, such as those for particular forms of genes that predispose people to breast cancer, have been available for a while. This year, however, has seen the arrival of commercial versions of techniques that can sample a person's entire genetic make-up, and do so in a way that will enable him to benefit from future discoveries as well as existing knowledge.

In many cases, knowing the risk will also allow (and might, indeed, encourage) someone to modify his behaviour to avoid a disease he is at risk of—or, failing that, to mitigate its consequences. Nevertheless, concerns are being raised about the accuracy of some tests now on the market, and also their usefulness when the results are supplied direct to consumers, rather than with professional medical advice.

Last year America's Government Accountability Office said that genetic tests it had bought from four websites misled consumers into thinking they were at risk of ailments such as heart disease, osteoporosis and type 2 (late onset) diabetes. In some cases, firms tricked consumers into buying “personalised supplements” that were actually no better than ordinary vitamins, but cost $1,200 a year. More recently, on December 4th, the British government's Human Genetics Commission published a review calling for greater regulation of genetic tests. One member of the commission recently went so far as to brand them a “waste of money”.

Testing times

Fraudsters can, of course, be found in any industry. But another part of the problem has been the science itself. Eric Brunner, an epidemiologist at University College, London, points out that he and his fellow researchers have struggled for years to try to understand the genetic basis of common diseases. The field is plagued by small, weak studies that are hard to turn into statistically robust conclusions. As a consequence, most findings of associations between diseases and particular genes (which often get reported widely in the media when they are announced) do not stand up to later scientific scrutiny. Yet the pace of commercialisation means that companies have often started selling tests based on the earlier studies by the time their results are discredited.

Paul Pharoah, an oncologist at Cambridge University and a critic of some gene-testing firms, says that in the past tests for a gene called *SOD2* have been available, with companies claiming it was associated with an increased risk of breast cancer. However, Dr Pharoah and his colleagues recently published the results of a large study which showed that *SOD2* is not associated with breast cancer after all.

With luck, this sort of thing will become rarer as scientists gather more data. However, some people worry that even those tests that do what they say on the packet may not actually give the consumer useful information. A possible example of this is a gene called *TCF7*, which is the subject of a test marketed by deCODE, an Icelandic firm. One form of the gene, *TCF7L2*, is strongly linked to type 2 diabetes. Having two copies of *TCF7L2* (one from each parent) doubles your risk of getting diabetes—that much is well established. But some researchers reckon that if you do not have any of the other risk factors for diabetes, your chance of getting the disease will be so low in the first place that this doubling is not worth knowing about.

The processes that lead to most diseases are not, however, the result of a single genetic failure. Instead, they involve hundreds if not thousands of genes interacting with one another. In the past geneticists have concentrated on genes that have large individual effects when they go wrong, because such effects are easy to spot. But particular combinations of genes that are not individually significant may also be important.

This raises the question of how many genes a test needs to look at to yield a meaningful estimate of risk. Though the answer is not yet clear, Dr Pharoah reckons it is likely to be more than just two or three. Tests that look at only a handful of genes, he thinks, are simply not useful.

The answer to that, of course, is more information. And it is here that the new generation of genome-wide tests comes in. These tests (which are being offered by deCODE and also by 23andMe, a Californian company) analyse the pattern of hundreds of thousands of bits of DNA known as single-nucleotide polymorphisms (SNPs, often pronounced “snips”). A SNP is a point on a chromosome where DNA routinely varies from one person to another. Many SNPs are associated with disease-causing forms of genes, and more associations are being discovered every month. Indeed, this year has seen a bumper harvest of strong, well-replicated associations between SNPs and diseases such as cancer and diabetes.

Analysing SNPs is not the same as analysing a full genetic sequence. For that to happen routinely, the technology will have to improve a lot (see article). However, deCODE and 23andMe are offering individuals a far broader look at their genes than has been possible before—and, in the case of deCODE, are backing their opinions with original research done by the firm, rather than merely drawing on literature published by others.

Yours, for a SNP

Both firms take pains to point out that what they are offering is an “information service”, not a “test”, and certainly nothing that is intended to diagnose a medical condition. And with his firm's existing test for *TCF7L2*, Kari Stefansson, deCODE's boss, seems to agree that testing for this gene should be prescribed “in most instances” by a physician. However, he concedes that the wide-ranging SNP test will also tell customers how many copies of *TCF7L2* they have, whether they have been through a doctor or not.

Whatever the disclaimers say (and one purpose they have is to help firms to avoid regulation) people are clearly going to be getting medical information from such tests. For example, overweight customers who find they have two copies of *TCF7L2* really do have something to think about.

In time, of course, the regulators will catch up. Indeed, Dr Stefansson hopes that deCODE's products will eventually become approved diagnostic techniques, rather than mere information services. But for the moment, this is still an area where buyer should definitely beware.

And that is probably right. The technology of testing is improving fast and regulation risks slowing progress. Moreover, physicians' calls for scrutiny should themselves be scrutinised, because genetic testing inevitably transfers power from doctors to laymen.

That transfer of power brings responsibility, of course—the responsibility of consumers, aided by the gene-testing companies themselves, to interpret their new knowledge sensibly. If they do not, doctors' surgeries may be flooded with what have come to be known as the worried well, and regulation is sure to

follow. If people do take responsibility, however, a healthier life awaits them.

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Genetic sequencing

DNA, direct

Dec 6th 2007
From The Economist print edition

The race for the $1,000 genome is on

Get article background

JUST as computers used to occupy entire rooms, and were able to make only a few thousand computations a second, so the first DNA-sequencing machines were able to read only about 5,000 genetic “letters” a day. Technology changes. Now it is possible for a single machine to sequence a human genome of about 3 billion letters in two months. At this rate, those 5,000 letters would take less than ten seconds.

So where next? If the X Prize Foundation has its way, it will soon be possible to sequence a genome in hours. To make that happen, the foundation, perhaps better known for its spaceflight prize, is offering the Archon genomics prize. This will be worth $10m to the first team able to sequence 100 human genomes accurately in ten days or less. (The prize is sponsored by Stewart Blusson, a philanthropist who is president of Archon Minerals, a mining company based in Vancouver.)

The Archon prize has already tempted six teams to sign up. The latest, led by George Church, a chemist at Harvard Medical School in Boston, joined in this week. One of the other competitors is 454 Life Sciences Corporation, based in Branford, Connecticut. Earlier this year 454 sequenced the entire genome of James Watson (one of the scientists who worked out the structure of DNA molecules) in two months. It is improving this technology to try to win the prize.

454's technique involves attaching single-stranded fragments of DNA to small plastic balls placed in wells—over 1.5m of them—in a set of plates. Each well is then washed with a series of solutions that contain one of the four different genetic letters (known as nucleotides and denoted by the initials A, C, G and T).

The reason DNA is able to replicate, and thus pass genetic information down the generations, is that the nucleotides like to pair up in a consistent way—A with T and C with G. This is aided by an enzyme called polymerase that runs along a single DNA strand adding the correct nucleotides in order, to build up another strand. And that process, in turn, can be made visible using a second enzyme, called luciferase. This enzyme produces a flash of light in response to a chemical change that happens as a nucleotide is added. Recording which wells flash in response to which nucleotides means the sequence of the fragment in each well can be built up one base at a time. Add all the fragments together and you have the whole.

Other people developing sequencing technology are trying more direct ways to read the nucleotides. A team at the University of California, San Diego, which is not, at present, one of the X prize runners, does it by forcing DNA through tiny pores and logging each nucleotide as it passes. Meanwhile Reveo, a firm based in Hawthorne, New York that is going for the prize, runs microscopic knives along the surfaces of DNA molecules. The blades of the knives in question are only a few atoms across, and are thus sensitive to the ins and outs of any molecule they are touching. Since each nucleotide has a different shape, the result can be used to decode their order.

Whoever wins the race, Marc Hodosh, science director for the Archon X Prize, says their level of technology is likely to equate to a cost of $10,000 a genome. Although that is still some way short of the $1,000 genome that is reckoned to be the point at which a retail business becomes possible, Dr Hodosh thinks the process of commercialising the winner will, itself, bring about the necessary 90% fall in cost. That means the curious will be able to treat themselves to a complete scan without breaking the bank. Whether they will like the result is a different question.

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A mummified dinosaur

Dec 6th 2007
From The Economist print edition

AP

Dinosaur bones are fairly rare fossils, but compared with what is shown in this picture, they are as common as muck. It is a piece of dinosaur skin (or, rather, its petrified transmutation). It belongs to a fossil hadrosaur (a type of herbivorous dinosaur) that lived 67m years ago in what is now Hell Creek, North Dakota. The first bones of the animal were discovered in 1999 by Tyler Lyson, now a graduate student at Yale, but then a schoolboy. A full-scale expedition to recover it has, however, only recently been mounted. The fossil's state of preservation is remarkable. Besides skin, various ligaments and tendons have been found, and the specimen is now undergoing examination in the industrial equivalent of a hospital body scanner, at a Boeing workshop in California, to see if any internal organs have been petrified, too.

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Olfaction

Scents and sensitivity

Dec 6th 2007
From The Economist print edition

Subliminal smells can have powerful effects

IN A world where sight and sound seem to reign supreme, all it takes is a cursory glance at the size of the perfume industry to realise that smell matters quite a lot, too. Odours are known to regulate moods, thoughts and even dating decisions, which is why any serious romantic will throw on the eau de toilette before going out for a night on the town. Yet in all these cases, those affected are aware of what they are smelling. Unlike the media of sight and sound, in which subliminal messages have been studied carefully, the potential power of subliminal smells has been neglected.

Wen Li and her colleagues at Northwestern University in Chicago are now changing that. In particular, they are investigating smells so faint that people say they cannot detect them. The idea is to see whether such smells can nevertheless change the way that people behave towards others.

Dr Li's experiment, the results of which have just been published in *Psychological Science*, employed 31 volunteers. These people were exposed to three different odours at low concentration. One was the fresh lemon scent of citral. The second was the neutral ethereal perfume of anisole. The third was the foul sweaty smell of valeric acid. And the concentrations really were low. In the case of valeric acid, for example, that concentration was seven parts per trillion—a level only just detectable by bloodhounds. As a control, Dr Li used a mineral oil that has no detectable smell at any concentration.

The participants were asked to sniff a jar containing either one of the three odours or the scentless oil, and then press a button to indicate whether they thought the jar smelled of anything. Immediately after that, a picture of a face would appear on a screen in front of them for just over a second. Each participant was asked to rate the face's “likeability”.

Dr Li found that the odours helped shape people's judgments about the faces when their responses indicated that they had not smelled anything. When someone had been exposed to valeric acid, for example, he tended to react negatively to a face. Exposure to citral, by contrast, made that face seem, on average, more friendly. (Obviously, the same face was not shown to any given participant more than once.) Even more intriguing, however, was that when participants did consciously perceive a smell, its effect on face-perception disappeared.

What is going on is unclear. If smells can carry useful information about personality (which is possible), then the effect would be expected to be the same whether or not the chemical in question is detected subliminally. If they do not carry such information, then it is hard to see what use the subliminal reaction is. Nevertheless, it is there.

The findings do, however, demonstrate what might be a powerful method of manipulation. Indeed, Dr Li considers the potential uses to be vast. Business meetings might be made more pleasant by releasing appropriate fragrances into the air in unsmellable amounts. Conversely, fights might be started by putting people in the presence of a faint foul odour. Advertising hoardings might benefit from a little olfactory tweaking and cinema audiences could be reduced to floods of tears at the appropriate moment. The sweet smell of success might, in other words, actually be undetectable.

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Books of the year 2007

Pick of the bunch

Dec 6th 2007
From The Economist print edition

Illustration by Daniel Pudles

History, politics, music, business, biography, memoir, letters and fiction. There is something for everyone in this round-up of the year's best books

Biography

The Wagner Clan: The Saga of Germany's Most Illustrious and Infamous Family
By Jonathan Carr. *Grove Atlantic; 432 pages; $27.50. Faber and Faber; £20*

The all-consuming story of the Wagners, their friends, their rivalries and the marvellous music they made while becoming the Sopranos of the opera world.

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God's Architect: Pugin and the Building of Romantic Britain
By Rosemary Hill. *Allen Lane; 416 pages; £30*

The tragic life of the Victorian architect who built glorious cathedrals and filled Britain with buildings that look like medieval monasteries.

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Beatrix Potter: A Life in Nature
By Linda Lear. *St Martin's Press; 592 pages; $30. Allen Lane; £25*

A spunky, humorous woman who fought conventional Victorian family expectations to lead an independent life as an artist, businesswoman and conservationist.

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Edith Wharton
By Hermione Lee. *Knopf; 880 pages; $35. Chatto & Windus; £25*

Money, status, marriage and divorce: all became grist to the mill of the turn-of-the-century American

writer whom Henry James called “the great generalissima”.

———————————————————————

Two Lives: Gertrude and Alice
By Janet Malcolm. *Yale University Press; 240 pages; $25 and £16.99*

How two elderly Jewish lesbians—Gertrude Stein and Alice B. Toklas—survived the Nazis, by the author of “The Journalist and the Murderer”, “Psychoanalysis: The Impossible Profession”, and “Inside the Freud Archives”.

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Stanley: The Impossible Life of Africa's Greatest Explorer
By Tim Jeal. *Yale University Press; 608 pages; $38. Faber and Faber; £25*

The best and most readable biography of Henry Morton Stanley draws on a wealth of new material. Tim Jeal is also the biographer of Lord Baden Powell, who started the Boy Scouts, and David Livingstone, the most famous Victorian explorer.

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History

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The Cigarette Century: The Rise, Fall, and Deadly Persistence of the Product that Defined America
By Allan M. Brandt. *Basic Books; 704 pages; $36*

As recently as the late 1990s cigarettes killed more Americans than AIDS, car accidents, alcohol, murder, suicide, illegal drugs and fire. Nevertheless, the industry survived. This is the first full and convincing account of how it did so.

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God and Gold: Britain, America and the Making of the Modern World
By Walter Russell Mead. *Knopf; 464 pages; $27.95. Atlantic Books; £25*

The birth, rise, triumph, defence and continuing growth of Anglo-American power—or how the much-loathed Anglo-Saxons have (mostly) kept on winning.

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Legacy of Ashes: The History of the CIA
By Tim Weiner. *Doubleday; 704 pages; $27.95. Allen Lane; £25*

A survey of the agency's failures since its founding in 1947, which concludes that the world's most powerful country has yet to develop a first-rate spy service.

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1967: Israel, the War and the Year that Transformed the Middle East
By Tom Segev. *Metropolitan Books; 688 pages; $35. Little, Brown; £25*

A riveting narrative, based on letters, diaries and interviews, as well as Israel's rich official archives, that

analyses the diplomatic and military background to the six-day war and offers a shrewd insight into the nation's psyche.

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Byzantium: The Surprising Life of a Medieval Empire
By Judith Herrin. *Allen Lane; 416 pages; £20. To be published in America by Princeton University Press in January*

A new study which argues that the Byzantines were not just makers of bewitching golden art, but also ran a vibrant, dynamic, cosmopolitan empire whose legacy is still discernible all over south-east Europe and the Levant.

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Napoleon's Wars: An International History, 1803-1815
By Charles Esdaile. *Allen Lane; 621 pages; £30*

Charles Esdaile focuses on what made European nations fight each other—for so long and with such devastating results. A grand and panoramic study that reassesses a tumultuous era, looking far beyond the battles and Napoleon's insatiable greed for military glory.

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The Noble Revolt: The Overthrow of Charles I
By John Adamson. *Weidenfeld & Nicolson; 576 pages; £25*

A radical new look at the coming of the English civil war, itself one of the most fought-over episodes in English history and historiography.

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The Making of Victorian Values: Decency and Dissent in Britain, 1789-1837
By Ben Wilson. *Penguin; 464 pages; $27.95. Published in Britain as “Decency and Disorder”; Faber and Faber; £20*

One of Britain's most promising young historians examines how the liberality of the 18th century was transformed into the moralism of the Victorian age.

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The Verneys: A True Story of Love, War and Madness in Seventeenth-Century England
By Adrian Tinniswood. *Riverhead Books; 592 pages; $35. Jonathan Cape; £25*

Meet the family that was involved in cheesemaking, sword-buying and scandal-mongering—as well as the English civil war, the Great Fire of London and the coronation of William and Mary.

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Scotland: The Autobiography—2,000 Years of Scottish History by Those Who Saw it Happen
By Rosemary Goring. *Viking; 512 pages; £25. To be published in America by Overlook in July*

From the battlefield to the sports field: the tumultuous story of Scotland as told by those who witnessed it first hand. A surprising collection.

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Politics and current affairs

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Arsenals of Folly: The Making of the Nuclear Arms Race
By Richard Rhodes. *Knopf; 400 pages; $28.95. To be published in Britain by Simon & Schuster in February*

Despite the uncertainty of whether Iran is developing atomic weapons, the nuclear club has expanded by at least half since the collapse of the Soviet Union. By carefully assembling all the available evidence on the current state of the arms race, Richard Rhodes presents a terrifying overview of the global potential for killing.

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The Atomic Bazaar: The Rise of the Nuclear Poor
By William Langewiesche. *Farrar, Straus and Giroux; 192 pages; $22. Allen Lane; £20*

A former professional pilot, turned investigative reporter, William Langewiesche takes the low road from Washington, DC, to Pakistan, Russia, Georgia and Turkey to try to discover just how hard or easy it is to get hold of atomic weapons. A detailed companion to Richard Rhodes's big-picture approach.

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The Nine: Inside the Secret World of the Supreme Court
By Jeffrey Toobin. *Doubleday; 384 pages; $27.95*

Only an outsider such as Jeffrey Toobin, a staff writer at the New Yorker, could have written such an engaging, erudite, candid and insightful analysis of the work done by the usually highly secretive justices of America's Supreme Court.

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How Capitalism Was Built: The Transformation of Central and Eastern Europe, Russia, and Central Asia
By Anders Aslund. *Cambridge University Press; 384 pages; $25.99 and £15.99*

A rich and detailed chronicle of the unsteady transition from central planning to market economies, with a particularly good chapter on the rise of the Russian oligarchs and how they differ from the 19th-century American robber barons.

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India after Gandhi: The History of the World's Largest Democracy
By Ramachandra Guha. *Ecco; 912 pages; $34.95. Macmillan; £25*

Using a patient approach, gentle criticism and eclectic examples to draw evidence that supports his argument, Ramachandra Guha, a historian and biographer, offers a clear and detailed narrative explaining how the miracle that is modern India emerged from the colonial chrysalis.

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The Eight O'Clock Ferry to the Windward Side: Seeking Justice in Guantánamo Bay
By Clive Stafford Smith. *Nation Books; 336 pages; $25.95. Published in Britain as "Bad Men: Guantánamo Bay and the Secret Prisons"; Orion; £16.99*

The best analysis so far of the erosion of civil liberties in America and Britain and the consequences for individuals and society, by the lawyer who has represented more prisoners in Guantánamo than anyone else.

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The Art of Political Murder: Who Killed the Bishop?
By Francisco Goldman. *Grove Atlantic; 416 pages; $25. To be published in Britain by Atlantic Books in February*

In his first book of non-fiction, Francisco Goldman, a novelist whose mother is Guatemalan, examines a war crime and offers a long-overdue indictment of the criminals who, sanctioned by the regime, contributed to a generation of atrocities.

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Gomorrah: A Personal Journey into the Violent International Empire of Naples' Organized Crime System
By Roberto Saviano. *Farrar, Straus and Giroux; 301 pages; $25. To be published in Britain by Macmillan in January*

A national bestseller in Italy that traces the decline of Naples as construction, fashion, drugs and the disposal of toxic waste all fell under the systematic control of organised crime.

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Through the Darkness: A Life in Zimbabwe. By Judith Garfield Todd. *Struik; 472 pages; $28 and £14.99*

A harrowing tale of courage and betrayal by a white heroine of the liberation struggle against Ian Smith who has been punished (and stripped of her citizenship) with extraordinary vengefulness by Robert Mugabe for speaking out about the regime's abuses of power.

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Economics and business

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The Last Tycoons: The Secret History of Lazard Frères & Co—A Tale of Unrestrained Ambition, Billion-Dollar Fortunes, Byzantine Power Struggles, and Hidden Scandal
By William D. Cohan. *Doubleday; 742 pages; $29.95*

How an investment bank concentrated on providing corporate advice to the rich and powerful—a business model that relied not on its balance sheet but on the brains and wiles of the men toiling away in its famously ratty offices. William Cohan used to work at Lazard's himself.

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The Black Swan: The Impact of the Highly Improbable
By Nassim Nicholas Taleb. *Random House; 400 pages; $26.95. Allen Lane; £20*

A Wall Street trader turned philosopher on the power of the unexpected.

Illustration by Daniel Pudles

The Bottom Billion: Why the Poorest Countries are Failing and What Can Be Done About It
By Paul Collier. *Oxford University Press; 224 pages; $28 and £16.99*

Crammed with statistical nuggets and common sense, this book, by an economics professor at Oxford University, should be compulsory reading for anyone embroiled in the thankless business of trying to pull people out of the pit of poverty.

The Age of Turbulence: Adventures in a New World
By Alan Greenspan. *Penguin Press; 531 pages; $35 and £25*

A memoir-cum-essay by the famously opaque former chairman of the Federal Reserve that provides few surprises, but is an unexpectedly enjoyable read.

Wikinomics: How Mass Collaboration Changes Everything
By Don Tapscott and Anthony D. Williams. *Portfolio; 320 pages; $25.95. Atlantic Books; £16.99*

A believers' guide to how the emergence of community on the internet is fundamentally changing business.

From Higher Aims to Hired Hands: The Social Transformation of American Business Schools and the Unfulfilled Promise of Management as a Profession
By Rakesh Khurana. *Princeton University Press; 542 pages; $35 and £19*

A Harvard Business School professor tells the fascinating tale of how management has lost its way.

The Billionaire Who Wasn't: How Chuck Feeney Secretly Made and Gave Away a Fortune
By Conor O'Clery. *PublicAffairs; 352 pages; $26.95 and £15.99*

A rollicking story of how, by stealth, an Irish-American obsessed by secrecy built a business empire and revolutionised philanthropy.

Forces for Good: The Six Practices of High-Impact Nonprofits
By Leslie R. Crutchfield and Heather McLeod Grant. *Jossey-Bass; 336 pages; $29.95 and £15.99*

As the importance of non-profit organisations grows, so does the need for them to be well managed and effective. Cleverly chosen examples show how the best achieve their impact.

Super Crunchers: Why Thinking-by-Numbers Is the New Way to Be Smart
By Ian Ayres. *Bantam; 272 pages; $25. John Murray; £16.99*

A lively and clear analysis of how the accumulation of large bodies of data is changing the way that businesses (and people) make decisions.

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Fiction and memoirs

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The Yiddish Policemen's Union
By Michael Chabon. *HarperCollins; 432 pages; $26.95. Fourth Estate; £17.99*

The state of Israel never existed in Michael Chabon's sixth novel. Instead the Jewish homeland is a 60-year lease on a dodgy bit of Alaska. Life among the frozen Chosen is the setting for a gripping and thought-provoking whodunnit featuring the world's last Jewish settlement. Full of dark humour and Yiddish jokes, it tips its cap to Raymond Chandler and 1940s film noir. The year's funniest novel.

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Carpentaria
By Alexis Wright. *Giramondo Press; 519 pages; A$29.95. To be published in Britain by Constable & Robinson in March*

A sweeping novel that will be published in Britain next year (though not in America) about the unhappy relations between the white majority and indigenous aboriginals, by a notable Australian narrator. A voice to remember.

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On Chesil Beach
By Ian McEwan. *Nan A. Talese; 208 pages; $22. Jonathan Cape; £12.99*

This coolly written, bestselling account of the lasting effects of a marriage night in the 1950s that turned disastrously wrong has struck a chord, reminding perhaps too many readers of their first sexual experience. The author of “Atonement” has done it again.

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The Scandal of the Season
By Sophie Gee. *Scribner; 352 pages; $25. Chatto & Windus; £12.99*

A young Australian professor of English at Princeton University imagines Alexander Pope, a country poet and a hunchback, coming to London in 1711 to observe the illicit love affair between Arabella Fermor and Robert, Lord Petre. Sophie Gee's handsome and wilful heroes plunge headlong into a whirl of hedonism and heady politics in a rollicking imagined prequel to Pope's most famous poem, “The Rape of the Lock”. A novel of lust and luck.

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Harry Potter and the Deathly Hallows
By J.K. Rowling. *Scholastic; 784 pages; $34.99. Bloomsbury; £17.99*

Books written as part of a series that start well almost invariably fall off in quality. Not so the seventh and last HP, the end of the decade's most successful morality tale, which shows J.K. Rowling at the height of her magical imaginative powers.

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The Septembers of Shiraz
By Dalia Sofer. *HarperCollins; 352 pages; $24.95. Picador; £14.99*

A successful jeweller and gem merchant, patronised by the Tehran aristocracy and the wife of the shah, is arrested by two armed Revolutionary Guards. His wife searches frantically for him, while in prison he asks himself how he can survive. A powerful depiction of a prosperous Jewish family in Iran shortly after the revolution.

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Mr Pip
By Lloyd Jones. *Dial Press; 272 pages; $20. John Murray; £12.99*

A young girl finds escape through the pages of Charles Dickens's “Great Expectations”, thanks to the efforts of a new teacher who is drafted into the local village school during the 1990 blockade of the Melanesian island of Bougainville. The cadences of Pacific vernacular make spare, moving prose.

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Other Country
By Stephen Scourfield. *Allen & Unwin; 228 pages; A$29.95*

Set in the Australian Outback and written in a taut poetic style perfectly suited to the hardened characters who inhabit it, “Other Country” is unusual for the language of its landscape. Perfect for those who liked Cormac McCarthy's “All the Pretty Horses”, this novel richly deserves to be published in Britain and America.

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The Ghost
By Robert Harris. *Simon & Schuster; 352 pages; $26. Hutchinson; £18.99*

A racy political thriller that has earned its high sales in Britain, “The Ghost” is the tangled story of a former British prime minister, a strong supporter of the war in Iraq, and his wife and political adviser. Brilliantly persuasive, right up to the last page of its astonishing and unpredictable conclusion.

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The Uncommon Reader
By Alan Bennett. *Farrar, Straus and Giroux; 128 pages; $15. Faber & Faber/Profile Books; £10.99*

Witty and urbane, physically tiny and charming, this account of Queen Elizabeth II discovering the work of J.R. Ackerley, Jean Genet, Ivy Compton-Burnett and other writers is a Swiftian tirade against stupidity and philistinism, and a passionate argument for the civilising power of art. A perfect stocking filler.

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Culture and digressions

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Isolarion: A Different Oxford Journey
By James Attlee. *University of Chicago Press; 256 pages; $22.50 and £12*

James Attlee's scholarly, reflective and sympathetic journey up Oxford's unloved and unlovable Cowley Road is one of the best travel books written about Britain's oldest university city.

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The Tiger that Isn't: Seeing Through a World of Numbers
By Michael Blastland & Andrew Dilnot. *Profile Books; 185 pages; £12.99*

A reliable guide to a treacherous subject; a book that gives its readers the mental ammunition to make sense of official statistical claims. That this book manages to make them laugh at the same time is a rare and welcome feat.

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The Rest is Noise: Listening to the Twentieth Century
By Alex Ross. *Farrar, Straus and Giroux; 623 pages; $30. To be published in Britain in March by Fourth Estate*

Alex Ross's odyssey through the 20th century shows amongst other things how music was used by the Nazis in the 1930s and by the Americans during the cold war.

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Letters of Ted Hughes
Edited by Christopher Reid. *Faber and Faber; 756 pages; £30*

The roaring, intemperate missives of one of England's great primitives.

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The Domesday Book of Giant Salmon: A Record of the Largest Atlantic Salmon Ever Caught. By Fred Buller. *Constable & Robinson; 400 pages; £50*

Years in the making, this is a fisherman's treasury, the definitive collection of every recorded landing of a giant Atlantic salmon and the stories of their capture whether on the fly or by other means.

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Books by Economist writers in 2007

What we wrote

Dec 6th 2007
From The Economist print edition

When we weren't in the office

Our policy is not to review books written by our staff or regular freelance contributors because readers might doubt the independence of such reviews. Some readers, however, have expressed interest in knowing about such books. So here is a list of those published in 2007 by staff at The Economist Group, and by freelance writers. The list will be kept up to date here (where you will also find details of all staff books in print).

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Martine Franck
By Louise Baring. *Phaidon; 130 pages; $24.95 and £14.95*

Introducing the quiet work of Madame Henri Cartier-Bresson. The author, Martine Franck's sister-in-law, also writes regularly for *The Economist* about photography and the visual arts.

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Zoom: The Global Race to Fuel the Car of the Future
By Iain Carson and Vijay V. Vaitheeswaran. *Twelve Books; 352 pages; $27.99. To be published in Britain by Penguin in June*

As far as the future is concerned, oil is the problem. Cars are the solution. A detailed analysis of how the motor and oil industries are heading for divorce after a century of being hitched together, by two of our senior business writers.

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Guide to Hedge Funds: What They Are, What They Do, Their Risks, Their Advantages
By Philip Coggan. *Profile Books in association with* The Economist*; 192 pages; £16.99. To be published in America by Bloomberg Press in association with* The Economist *in spring 2008*

A detailed panorama of the financial world's more arcane mechanisms and how they work (or don't), by our capital markets editor.

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Pistols at Dawn: A History of Duelling
By Richard Hopton. *Portrait; 435 pages; £20*

A frequent reviewer of history books for *The Economist* evokes the world of gentlemen defending their honour in the early morning light, of frockcoats and pistols.

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Young Wisden: A New Fan's Guide to Cricket
By Tim de Lisle. *A&C Black/John Wisden; 128 pages; £12.99*

The cricketing world's bible specially written for children, by the deputy editor of *Intelligent Life*.

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Doing Business in China: How to Profit in the World's Fastest Growing Market
By Ted Plafker. *Hachette; 304 pages; $24.99. Little, Brown; £10.99*

The challenges of entering the Chinese market and not falling flat on your face, by a long-time contributor based in Beijing.

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Forgotten Continent: The Battle for Latin America's Soul
By Michael Reid. *Yale University Press; 352 pages; $30 and £19.99*

The political and economic transformation of a continent that is neither poor enough to elicit the same sympathy as Africa nor as explosively booming as India or China, by the editor of the Americas section.

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The Post-Birthday World
By Lionel Shriver. *HarperCollins; 528 pages; $25.95 and £15*

Can life be changed by just one kiss? One of our leading fiction reviewers uses a clever device to explore the role of fate in romance, and concludes that there is no such thing as the perfect man.

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Being Shelley: The Poet's Search for Himself
By Ann Wroe. *Pantheon; 464 pages; $30. Jonathan Cape; £25*

An inside-out biography of one of England's greatest poets by the editor of our briefings and our obituaries. Ann Wroe seeks out the inner adventures of a spirit struggling to escape and create, dwelling on Shelley's life in his poetry rather than the daily round.

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Holy Land, Unholy War: Israelis and Palestinians
By Anton La Guardia. *Penguin; 559 pages; £11.99*

A new and updated edition of a study first published in 2001, by our defence and security correspondent.

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Evel Knievel

Dec 6th 2007
From The Economist print edition

Robert Craig (Evel) Knievel, stuntman, died on November 30th, aged 69

Globe Photos

THE question was why. Why—as the motor bike soared into the air, hurtled down, crashed into the tarmac and careered onwards, dragging with it a tumbly, bending human figure whose bones were almost audibly snapping—would any sane man want to do such a thing? Where was the point in trying to treat a motorbike like an aeroplane, and landing yourself in casts and a coma for the next few weeks?

Of course, Evel Knievel did not always crash. He sailed over 19 side-by-side cars in Ontario, California, and a pile of 52 wrecked motors at the Los Angeles Memorial Coliseum. In Canada in 1974 he cleared 13 Mack trucks, and in Kings Island, Ohio, in 1975 he soared over 14 Greyhound buses. Statistically, most of his 300-odd jumps were successes. But he was famous for the number of times he miscalculated the distance, or his speed, or mistimed things, thereby meeting the asphalt with more than enough force to kill himself.

His two most-watched jumps were both disasters. In 1967 he smashed a hip, femur, wrist and both ankles attempting to clear the fountains at Caesars Palace, in Las Vegas. Seven years later he almost drowned while failing to jump the Snake River Canyon, a quarter-of-a-mile wide, in Idaho. On that occasion he had strapped two rocket engines onto the sides of his Harley Davidson. Over his career, his 35 broken bones made the Guinness Book of Records; his body rattled with pins and plates, and it seemed preposterous that he should have died in his bed, of pulmonary fibrosis. Each catastrophe increased the likelihood that he would give up his weird stunts; but as soon as he could he would limp back and try again.

Sheer heroism, his fans said. Heroism and American grit, born out of Butte, Montana, where men were men. But there was always something a bit fey about Mr Knievel, even in the 1970s, when long hair and tight crotches made every young man look like a member of a *corps de ballet*. In the black-clad Hells Angels world of motorbike racing, he sported white leathers inspired by Liberace and sprinkled with glittering stars; a short shoulder-cape, looking vaguely like a pair of wings; and a gold-topped cane. Mr Knievel didn't jump for America or for Jesus. He rode bikes, he said, because life was boring otherwise.

Perhaps that typically spare remark was true. Certainly in Butte the best free fun you could have on your own was to make a bike do wild things over the mine-riddled hills. Or you could visit Joie Chitwood's Auto Daredevil Show when it came through, watching cars being spun round in the dust or driven on two wheels for half a mile. Later on Mr Knievel, working as a miner, tried to do similar stunt-stuff with an earth-mover; he cut through the power supply and blacked out the town. And in 1965, selling motorbikes for a spell in Moses Lake, Washington, business became a lot more interesting when, fired up with a Wild Turkey or two, he did tricks to draw in the customers: jumping a car, then a car and a 20-foot box of rattlesnakes, then two cars, rattlers and a mountain lion, until a crowd came to watch him.

Into a haystack

There was money there somewhere. And regular money was something Mr Knievel found hard to get. He had tried newspaper-selling, hubcap-stealing and burglary. (The name “Evil”, later softened by a different spelling, had been bestowed on him by the Butte police.) He had been—so he said—a card-sharp and a safe-cracker, had sold insurance and had run a hockey team, the Butte Bombers, before apparently absconding with the money from their biggest game. A detour into hunt-guiding ended when he was found to be taking his clients to shoot elk in Yellowstone National Park. But now, it seemed, people would pay $500 just to see him jump bikes over cars. They would pay even if he failed; in fact, they would part with more. Determinedly, he set out to sell himself as a daredevil rider.

By 1968 he was earning $25,000 per jump. Some events pulled in extraordinary money: $1m for crashing over 13 single-deckers in London, $6m for the Snake River plunge. Mr Knievel bought a fleet of yachts and bragged—though he had been married for years to his childhood sweetheart—of many women. He said he made $60m, but gambled prodigally. The liquor flowed, and the bones kept breaking.

It was all bound to end in tears, bankruptcy, divorce and the serious battery of his press officer with an aluminium baseball bat. But it lasted as long as it did, until 1981, because Mr Knievel's true talent was to spin crazy dreams. He might jump 13 cars today, but tomorrow he would jump 20. He might clear the Snake River now, but his real aim was to leap the Grand Canyon. And after that he would jump 40,000 feet from a plane, without a parachute, and land in a haystack; just pick the haystack.

It was all hokum, but the public loved the dare. So too did the toymakers, earning $350m from the selling of Evel Knievel figures who, on their little bikes, would crash through simulated rings of fire and 16-piece brick walls. And so too did a huge number of the small boys of the world, for whom mounds and ponds and ramps and planks now became the springboard to wild, free flight—or, just as probably, though they wouldn't much care, a mudbath and a broken arm.

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Overview

Dec 6th 2007
From The Economist print edition

The Bank of **Canada** cut its benchmark interest rate from 4.5% to 4.25%, because of concerns that tighter conditions in credit markets and faltering American demand would hurt the economy. The bank said it now expects inflation to be lower than it had forecast in October.

Consumer prices in the **euro area** rose by 3% in the year to November, the highest 12-month rate since May 2001 and well above the central bank's target of 2% or below. The currency zone's unemployment rate fell from 7.3% to 7.2% in October.

In **America** the Institute for Supply Management's (ISM) manufacturing index edged down to 50.8 in November, a 10-month low. The ISM's gauge of service-sector activity fell to 54.1, its weakest reading since March. Labour productivity in non-farm businesses rose at an annualised rate of 6.3% in the third quarter, revised from 4.9%.

Australia's central bank left its benchmark interest rate unchanged at 6.75%, but cautioned that it was still worried about the outlook for inflation. GDP in Australia rose by 1% in the third quarter, leaving it 4.3% higher than a year earlier.

The outlook for both inflation and output in the rich world is worsening, according to *The Economist's* **monthly poll of forecasters** (see article). Projections for next year's GDP growth have been shaved back for each of the G7 countries. Inflation forecasts have been raised for almost all the economies surveyed.

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Output, prices and jobs

Dec 6th 2007
From The Economist print edition

Output, prices and jobs

% change on year ago

	Gross domestic product				Industrial production	Consumer prices			Unemployment
	latest	qtr*	2007†	2008†	latest	latest	year ago	2007†	rate‡, %
United States	+2.8 Q3	+4.9	+2.1	+2.0	+1.8 Oct	+3.5 Oct	+1.3	+2.8	4.7 Oct
Japan	+2.1 Q3	+2.6	+1.9	+1.7	+4.7 Oct	+0.3 Oct	+0.4	nil	4.0 Oct
China	+11.5 Q3	na	+11.5	+9.9	+17.9 Oct	+6.5 Oct	+1.4	+4.7	9.5 2006
Britain	+3.2 Q3	+3.0	+3.1	+2.0	+1.0 Oct	+2.1 Oct§	+2.4	+2.3	5.4 Sep††
Canada	+2.9 Q3	+2.9	+2.5	+2.0	+1.4 Sep	+2.4 Oct	+1.0	+2.3	5.8 Oct
Euro area	+2.7 Q3	+2.8	+2.6	+1.9	+3.5 Sep	+3.0 Nov	+1.9	+2.2	7.2 Oct
Austria	+3.4 Q3	+3.0	+3.1	+2.6	+1.3 Sep	+2.8 Oct	+1.2	+1.9	4.3 Oct
Belgium	+2.5 Q3	+1.6	+2.6	+2.0	nil Sep	+2.9 Nov	+1.5	+1.8	11.1 Oct‡‡
France	+2.1 Q3	+2.9	+1.9	+1.8	+1.6 Sep	+2.0 Oct	+1.1	+1.5	8.1 Q2§§
Germany	+2.5 Q3	+2.8	+2.6	+2.0	+6.1 Sep	+3.0 Nov	+1.5	+2.2	8.6 Nov
Greece	+3.6 Q3	na	+3.8	+2.9	+1.7 Sep	+3.1 Oct	+2.8	+2.8	7.6 Aug
Italy	+1.9 Q3	+1.5	+1.7	+1.3	+0.3 Sep	+2.4 Nov	+1.8	+2.0	6.0 Q2
Netherlands	+4.1 Q3	+7.2	+2.8	+2.2	+2.3 Sep	+1.9 Nov	+1.1	+1.7	4.3 Oct††
Spain	+3.8 Q3	+2.8	+3.7	+2.5	+2.6 Oct	+3.6 Oct	+2.5	+2.8	8.1 Oct
Czech Republic	+6.0 Q2	+5.7	+5.7	+4.5	+1.2 Sep	+4.0 Oct	+1.3	+2.6	5.8 Oct
Denmark	+1.8 Q3	+5.3	+1.5	+1.5	−0.8 Oct	+1.7 Oct	+1.5	+1.6	3.0 Oct
Hungary	+1.0 Q3	+1.2	+2.0	+3.0	+5.9 Oct	+6.7 Oct	+6.3	+7.8	7.3 Oct††
Norway	+3.1 Q3	+5.6	+3.3	+2.6	+0.3 Sep	−0.2 Oct	+2.7	+0.4	2.6 Sep††
Poland	+6.4 Q3	na	+6.5	+5.2	+10.6 Oct	+3.0 Oct	+1.2	+2.2	11.3 Oct‡‡
Russia	+7.8 Q2	na	+7.2	+6.6	+6.1 Oct	+10.8 Oct	+9.2	+8.9	5.8 Oct‡‡
Sweden	+2.5 Q3	+2.4	+3.2	+2.9	+1.1 Sep	+2.7 Oct	+1.3	+2.0	5.7 Oct‡‡
Switzerland	+2.9 Q3	+1.3	+2.7	+2.0	+9.8 Q2	+1.8 Nov	+0.5	+0.8	2.7 Nov‡‡
Turkey	+3.9 Q2	na	+5.2	+5.1	+2.2 Sep	+8.4 Nov	+9.9	+8.5	9.2 Q3‡‡
Australia	+4.3 Q3	+4.1	+4.2	+3.5	+4.6 Q2	+1.9 Q3	+3.9	+2.4	4.3 Oct
Hong Kong	+6.2 Q3	+7.0	+6.1	+4.5	−2.3 Q2	+3.2 Oct	+2.0	+2.0	3.9 Oct††
India	+8.9 Q3	na	+7.9	+7.7	+6.4 Sep	+5.5 Oct	+7.3	+6.5	7.6 2006
Indonesia	+6.5 Q3	na	+6.2	+6.1	−1.4 Sep	+6.7 Nov	+5.3	+6.3	9.8 Feb
Malaysia	+6.7 Q3	na	+6.0	+5.8	+3.4 Sep	+1.9 Oct	+3.1	+2.0	3.4 Q2
Pakistan	+7.0 2007**	na	+6.4	+5.9	+7.4 Sep	+9.3 Oct	+8.1	+6.9	6.2 2006††
Singapore	+8.9 Q3	+6.4	+7.7	+4.8	+0.9 Oct	+3.6 Oct	+0.4	+1.8	1.7 Q3
South Korea	+5.2 Q3	+1.4	+5.0	+4.7	+17.8 Oct	+3.5 Nov	+2.1	+2.5	3.1 Oct
Taiwan	+6.9 Q3	na	+4.3	+4.4	+15.9 Oct	+4.8 Nov	+0.2	+1.4	3.9 Oct
Thailand	+4.9 Q3	+6.3	+4.5	+4.9	+12.2 Oct	+3.0 Nov	+3.5	+2.0	1.2 Sep
Argentina	+8.7 Q2	+8.8	+8.3	+6.0	+1.5 Sep	+8.4 Oct	+10.5	+8.8	8.1 Q3‡‡
Brazil	+5.4 Q2	+3.2	+4.7	+4.5	+10.3 Oct	+4.1 Oct	+3.3	+3.6	8.7 Oct‡‡
Chile	+4.1 Q3	−2.5	+5.6	+5.5	+5.0 Oct	+7.4 Nov	+2.1	+4.1	7.7 Oct††‡‡
Colombia	+6.9 Q2	+4.4	+6.7	+5.6	+6.0 Sep	+5.4 Nov	+4.3	+5.5	10.0 Oct‡‡
Mexico	+3.3 Q3	+5.9	+3.0	+2.8	+0.4 Sep	+3.7 Oct	+4.3	+4.0	3.9 Oct‡‡
Venezuela	+8.7 Q3	na	+6.9	+4.8	+9.3 Aug	+20.7 Nov	+15.8	+17.8	8.5 Q3‡‡
Egypt	+6.9 Q3	na	+7.1	+7.3	+7.5 2007**	+6.9 Nov	+12.1	+9.2	8.1 Q2‡‡
Israel	+4.8 Q3	+6.1	+5.3	+4.2	−3.3 Sep	+2.2 Oct	−0.2	+0.4	7.3 Q3
Saudi Arabia	+4.3 2006	na	+4.7	+5.6	na	+4.9 Sep	+2.5	+4.0	na
South Africa	+5.1 Q3	+4.7	+4.9	+5.1	+5.2 Oct	+7.9 Oct	+5.4	+6.2	25.5 Mar‡‡
MORE COUNTRIES Data for the countries below are not provided in printed editions of *The Economist*									
Estonia	+6.4 Q3	+7.4	+7.1	+5.3	+5.9 Oct	+8.5 Oct	+3.7	+6.4	5.7 Sep
Finland	+4.1 Q3	+3.0	+4.1	+3.2	−1.9 Oct	+2.7 Oct	+1.8	+2.6	7.0 Oct
Iceland	+2.5 Q2	+8.9	+1.8	+3.2	+7.6 2006	+5.2 Nov	+7.3	+5.0	0.8 Oct‡‡
Ireland	+5.4 Q2	−5.5	+4.6	+3.5	+4.3 Sep	+4.8 Oct	+3.9	+4.7	4.8 Oct
Latvia	+11.1 Q3	na	+10.7	+7.5	nil Sep	+13.2 Oct	+5.6	+10.1	5.2 Sep
Lithuania	+10.8 Q3	+10.0	+9.2	+7.4	na	+7.6 Oct	+3.6	+5.6	4.2 Oct
Luxembourg	+5.3 Q2	+5.3	+5.0	+4.4	−5.1 Sep	+3.2 Nov	+2.0	+2.3	4.3 Oct‡‡
New Zealand	+3.8 Q2	+3.4	+3.1	+2.8	+0.5 Q2	+1.8 Q3	+3.5	+2.5	3.5 Q3
Peru	+8.8 Sep	na	+7.5	+6.5	+9.4 Sep	+3.5 Nov	+1.5	+1.7	7.4 Oct‡‡
Philippines	+6.6 Q3	+1.1	+6.9	+5.0	−1.0 Sep	+3.2 Nov	+4.7	+2.7	7.8 Q3‡‡
Portugal	+1.8 Q3	nil	+1.8	+2.0	+3.6 Oct	+2.6 Oct	+2.7	+2.3	7.9 Q3‡‡
Slovakia	+9.4 Q3	na	+8.5	+6.5	+15.4 Sep	+3.3 Oct	+3.7	+2.7	7.9 Oct
Slovenia	+5.9 Q2	na	+5.8	+4.6	+2.9 Sep	+5.7 Nov	+2.3	+3.4	7.2 Sep‡‡

*% change on previous quarter, annual rate. †*The Economist* poll or Economist Intelligence Unit estimate/forecast. ‡National definitions. §RPI inflation rate 4.2% in Oct. **Year ending June. ††Latest three months. ‡‡Not seasonally adjusted. §§New series.

Sources: National statistics offices and central banks; Thomson Datastream; Reuters; Centre for Monitoring Indian Economy; OECD; ECB

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The Economist commodity-price index

Dec 6th 2007
From The Economist print edition

The Economist commodity-price index

2000=100

	Nov 27th	Dec 4th*	% change on one month	% change on one year
Dollar index				
All items	212.2	211.4	−2.6	+12.3
Food	201.8	205.7	+4.6	+33.7
Industrials				
All	225.6	218.8	−10.2	−6.0
Nfa†	176.3	171.9	−2.2	+25.6
Metals	252.6	244.5	−12.9	−14.3
Sterling index				
All items	155.5	155.7	−1.3	+7.5
Euro index				
All items	132.1	132.5	−4.0	+1.3
Gold				
$ per oz	812.75	798.95	−3.0	+24.2
West Texas Intermediate				
$ per barrel	94.42	88.32	−8.4	+41.4

*Provisional †Non-food agriculturals.

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The Economist poll of forecasters, December averages

Dec 6th 2007
From The Economist print edition

The Economist poll of forecasters, December averages (previous month's, if changed)

	Real GDP, % change Low/high range		Real GDP, % change average		Consumer prices % increase		Current account % of GDP	
	2007	2008	2007	2008	2007	2008	2007	2008
Australia	3.8/4.5	3.3/3.6	4.2	3.5 (3.7)	2.4	3.0 (2.9)	−5.8 (−5.7)	−5.6 (−5.5)
Belgium	2.6/2.7	1.7/2.5	2.6	2.0	1.8 (1.7)	2.0 (1.8)	2.5 (2.4)	2.3 (2.4)
Britain	2.9/3.2	1.6/2.7	3.1 (3.0)	2.0 (2.1)	2.3 (2.2)	2.0	−3.3	−3.2 (−3.1)
Canada	2.2/2.9	0.4/2.9	2.5 (2.6)	2.0 (2.3)	2.3 (2.2)	1.9 (2.0)	1.5 (1.7)	0.7 (1.3)
France	1.8/2.0	1.3/2.3	1.9 (1.8)	1.8 (1.9)	1.5 (1.4)	1.9 (1.8)	−1.2 (−1.1)	−1.3 (−1.0)
Germany	2.5/2.7	1.5/2.5	2.6	2.0 (2.1)	2.2 (2.1)	1.9 (1.7)	5.8 (5.6)	5.5
Italy	1.3/1.9	0.8/1.8	1.7	1.3 (1.4)	2.0 (1.9)	2.1 (1.9)	−2.5	−2.3
Japan	1.6/2.2	1.4/2.0	1.9 (2.0)	1.7 (1.8)	nil	0.4	4.7	4.8 (4.6)
Netherlands	2.4/3.1	1.8/3.2	2.8 (2.5)	2.2	1.7	2.1 (1.9)	7.6 (7.8)	7.3
Spain	3.4/3.8	2.0/3.1	3.7	2.5 (2.7)	2.8 (2.6)	3.0 (2.7)	−9.3 (−9.1)	−8.8 (−8.6)
Sweden	2.6/3.5	2.5/3.3	3.2 (3.4)	2.9 (3.0)	2.0 (1.8)	2.2 (2.1)	7.0 (7.1)	6.7
Switzerland	2.4/2.8	1.6/2.4	2.7 (2.6)	2.0	0.8 (0.6)	1.3 (1.2)	16.2 (16.3)	15.1 (15.4)
United States	1.8/2.2	1.2/2.4	2.1 (2.0)	2.0 (2.1)	2.8	2.6 (2.3)	−5.5	−5.0 (−5.1)
Euro area	2.5/2.7	1.5/2.4	2.6	1.9 (2.0)	2.2 (2.0)	2.2 (2.0)	0.1	0.1 (0.3)

Sources: ABN AMRO, BNP Paribas, Citigroup, Decision Economics, Deutsche Bank, Economist Intelligence Unit, Goldman Sachs, HSBC Securities, KBC Bank, JPMorgan Chase, Morgan Stanley, Scotiabank, UBS

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Trade, exchange rates, budget balances and interest rates

Dec 6th 2007
From The Economist print edition

Trade, exchange rates, budget balances and interest rates

	Trade balance* latest 12 months, $bn	Current-account balance latest 12 months, $bn	Current-account balance % of GDP 2007†	Currency units, per $ Dec 5th	Currency units, per $ year ago	Budget balance % of GDP 2007†	Interest rates, % 3-month latest	Interest rates, % 10-year gov't bonds, latest
United States	−805.0 Sep	−793.2 Q2	−5.5	–	–	−1.2	4.44	3.91
Japan	+104.0 Sep	+205.0 Sep	+4.7	111	115	−2.6	0.73	1.47
China	+256.5 Oct	+249.9 2006	+11.4	7.39	7.82	0.2	4.35	4.83
Britain	−164.4 Sep	−86.6 Q2	−3.3	0.49	0.51	−3.0	6.65	4.51
Canada	+48.4 Sep	+16.3 Q3	+1.5	1.01	1.15	1.0	3.80	3.92
Euro area	+44.5 Sep	+34.2 Sep	+0.1	0.68	0.75	−0.9	4.87	4.09
Austria	+0.9 Sep	+12.3 Q2	+2.8	0.68	0.75	−0.6	4.87	4.16
Belgium	+18.9 Sep	+13.0 Jun	+2.5	0.68	0.75	−0.4	4.94	4.23
France	−44.4 Sep	−28.0 Sep	−1.2	0.68	0.75	−2.4	4.87	4.15
Germany	+239.3 Sep	+204.5 Sep	+5.8	0.68	0.75	−0.3	4.87	4.05
Greece	−51.1 Aug	−41.7 Sep	−13.1	0.68	0.75	−2.7	4.87	4.37
Italy	−13.6 Sep	−47.7 Sep	−2.5	0.68	0.75	−2.4	4.87	4.38
Netherlands	+51.1 Sep	+57.2 Q3	+7.6	0.68	0.75	−0.3	4.87	4.14
Spain	−126.0 Sep	−126.1 Aug	−9.3	0.68	0.75	1.8	4.87	4.21
Czech Republic	+3.7 Oct	−5.8 Sep	−3.5	17.9	21.0	−3.9	3.99	4.46
Denmark	+3.9 Sep	+4.0 Sep	+1.5	5.09	5.60	3.8	4.90	4.13
Hungary	−1.0 Sep	−6.8 Q2	−5.8	172	192	−6.0	7.51	6.80
Norway	+54.7 Oct	+59.9 Q3	+14.3	5.49	6.11	18.9	5.91	4.49
Poland	−11.3 Sep	−15.5 Sep	−4.3	2.45	2.86	−2.0	5.64	5.70
Russia	+121.5 Sep	+73.5 Q3	+6.1	24.5	26.2	3.0	10.00	6.33
Sweden	+18.5 Oct	+29.4 Q3	+7.0	6.41	6.80	2.8	3.90	4.15
Switzerland	+11.3 Oct	+64.9 Q2	+16.2	1.13	1.19	0.3	2.76	2.83
Turkey	−59.6 Oct	−34.4 Sep	−7.3	1.18	1.44	−2.8	17.21	6.32‡
Australia	−15.9 Oct	−49.9 Q3	−5.8	1.15	1.27	1.6	7.26	5.97
Hong Kong	−21.9 Oct	+24.9 Q2	+9.7	7.80	7.77	1.9	3.93	2.97
India	−66.0 Oct	−9.7 Q2	−1.1	39.5	44.7	−3.4	7.50	8.21
Indonesia	+41.2 Oct	+11.0 Q2	+2.5	9,265	9,120	−1.7	8.13	6.63‡
Malaysia	+29.3 Oct	+27.6 Q2	+13.5	3.34	3.55	−3.2	3.62	4.35‡
Pakistan	−15.0 Oct	−7.3 Q3	−4.6	61.3	60.9	−4.6	9.73	8.53‡
Singapore	+37.4 Oct	+46.3 Q3	+24.5	1.45	1.54	0.3	2.56	2.76
South Korea	+17.4 Nov	+9.7 Oct	+1.0	924	916	0.6	5.59	5.87
Taiwan	+15.7 Oct	+28.4 Q3	+6.3	32.3	32.3	−2.1	2.60	2.65
Thailand	+10.5 Oct	+12.9 Oct	+3.6	33.8	35.7	−1.9	3.70	4.67
Argentina	+10.7 Oct	+7.4 Q2	+2.7	3.13	3.06	1.2	13.94	na
Brazil	+41.4 Nov	+7.4 Oct	+0.7	1.80	2.15	−1.8	11.18	6.16‡
Chile	+24.7 Oct	+6.7 Q3	+4.8	501	525	8.1	6.12	4.40‡
Colombia	−1.9 Aug	−4.8 Q2	−3.8	2,037	2,281	−0.2	8.65	5.85‡
Mexico	−12.1 Oct	−7.5 Q3	−0.5	10.9	10.9	nil	7.44	7.94
Venezuela	+23.4 Q3	+20.2 Q3	+7.7	5,550	3,008§	−2.2	11.54	6.55‡
Egypt	−15.8 Q2	+2.7 Q2	+1.8	5.53	5.72	−7.5	7.13	5.24‡
Israel	−9.5 Oct	+7.8 Q2	+3.7	3.86	4.20	−0.2	4.25	5.30
Saudi Arabia	+146.6 2006	+98.9 2006	+23.2	3.74	3.75	18.9	4.26	na
South Africa	−11.3 Oct	−17.4 Q2	−6.8	6.79	7.11	1.0	11.00	8.40
MORE COUNTRIES	Data for the countries below are not provided in printed editions of *The Economist*							
Estonia	−4.1 Sep	−5.1 Sep	−14.8	10.7	11.7	3.0	6.25	na
Finland	+12.8 Sep	+13.2 Sep	+6.4	0.68	0.75	4.0	4.74	4.14
Iceland	−1.6 Nov	−3.0 Q3	−16.9	61.8	68.9	5.3	14.16	na
Ireland	+36.9 Sep	−10.5 Q2	−5.2	0.68	0.75	1.1	4.87	4.29
Latvia	−7.2 Sep	−6.4 Sep	−22.2	0.48	0.52	0.4	9.88	na
Lithuania	−6.6 Sep	−4.5 Sep	−14.5	2.36	2.59	−0.5	6.88	na
Luxembourg	−5.9 Sep	+4.6 Q2	na	0.68	0.75	1.0	4.87	na
New Zealand	−4.2 Oct	−9.2 Q2	−8.1	1.31	1.46	4.8	7.30	6.31
Peru	+8.5 Sep	+2.2 Q3	+1.1	2.99	3.21	0.7	5.00	na
Philippines	−4.3 Sep	+6.4 Jun	+5.9	42.0	49.5	−0.9	6.94	na
Portugal	−23.8 Aug	−18.4 Sep	−8.5	0.68	0.75	−3.0	4.87	4.29
Slovakia	−1.1 Sep	−3.8 Jul	−4.4	22.7	26.6	−2.9	4.28	4.61
Slovenia	−2.6 Sep	−1.4 Aug	−3.3	0.68	0.75	−0.5	na	na

*Merchandise trade only. †*The Economist* poll or Economist Intelligence Unit forecast. ‡Dollar-denominated bonds. §Unofficial exchange rate.

Sources: National statistics offices and central banks; Thomson Datastream; Reuters; JPMorgan; Bank Leumi le-Israel; Centre for Monitoring Indian Economy; Danske Bank; Hong Kong Monetary Authority; Standard Bank Group; UBS; Westpac.

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Markets

Dec 6th 2007
From The Economist print edition

Markets

	Index Dec 5th	% change on one week	% change on Dec 29th 2006 in local currency	% change on Dec 29th 2006 in $ terms
United States (DJIA)	13,445.0	+1.2	+7.9	+7.9
United States (S&P 500)	1,485.0	+1.1	+4.7	+4.7
United States (NAScomp)	2,666.4	+0.1	+10.4	+10.4
Japan (Nikkei 225)	15,608.9	+3.0	–9.4	–2.7
Japan (Topix)	1,526.6	+3.5	–9.2	–2.4
China (SSEA)	5,291.5	+5.0	+88.0	+98.6
China (SSEB, $ terms)	354.7	+11.0	+158.0	+172.6
Britain (FTSE 100)	6,493.8	+3.0	+4.4	+8.1
Canada (S&P TSX)	13,734.5	+0.8	+6.4	+22.3
Euro area (FTSE Euro 100)	1,380.3	+1.9	+8.0	+20.0
Euro area (DJ STOXX 50)	4,410.0	+2.0	+7.0	+19.0
Austria (ATX)	4,449.0	+1.7	–0.3	+10.8
Belgium (Bel 20)	4,143.9	+1.3	–5.6	+5.0
France (CAC 40)	5,659.1	+1.8	+2.1	+13.5
Germany (DAX)*	7,944.8	+2.9	+20.4	+33.9
Greece (Athex Comp)	5,091.0	+2.8	+15.9	+28.8
Italy (S&P/MIB)	39,125.0	+1.7	–5.6	+5.0
Netherlands (AEX)	507.8	+1.5	+2.5	+13.9
Spain (Madrid SE)	1,713.9	+1.7	+10.2	+22.5
Czech Republic (PX)	1,778.8	+1.8	+12.0	+30.6
Denmark (OMXCB)	455.6	+2.7	+7.4	+19.4
Hungary (BUX)	25,943.5	+5.2	+4.4	+15.5
Norway (OSEAX)	569.8	+0.9	+13.4	+28.5
Poland (WIG)	58,143.0	+4.2	+15.3	+36.6
Russia (RTS, $ terms)	2,262.3	+4.3	+9.5	+17.7
Sweden (Aff.Gen)	347.3	+1.3	–4.9	+1.6
Switzerland (SMI)	8,758.2	+1.2	–0.3	+8.1
Turkey (ISE)	55,521.2	+4.4	+41.9	+70.8
Australia (All Ord.)	6,568.4	+2.1	+16.4	+28.4
Hong Kong (Hang Seng)	29,345.5	+7.2	+47.0	+46.6
India (BSE)	19,738.1	+4.2	+43.2	+60.5
Indonesia (JSX)	2,768.1	+3.6	+53.3	+48.8
Malaysia (KLSE)	1,427.8	+4.5	+30.2	+37.4
Pakistan (KSE)	14,137.4	+1.8	+40.8	+39.9
Singapore (STI)	3,560.1	+5.6	+19.2	+26.5
South Korea (KOSPI)	1,938.2	+5.6	+35.1	+36.1
Taiwan (TWI)	8,677.0	+4.8	+10.9	+11.8
Thailand (SET)	833.3	+1.6	+22.6	+30.9
Argentina (MERV)	2,211.9	–0.9	+5.8	+3.6
Brazil (BVSP)	64,927.0	+5.2	+46.0	+73.5
Chile (IGPA)	14,475.8	+1.0	+17.0	+24.2
Colombia (IGBC)	11,002.7	–1.9	–1.4	+8.4
Mexico (IPC)	30,761.6	+5.1	+16.3	+15.9
Venezuela (IBC)	39,837.5	+5.2	–23.7	–54.1
Egypt (Hermes)	88,793.6	+4.2	+44.9	+49.8
Israel (TA-100)	1,154.0	+2.2	+25.2	+36.9
Saudi Arabia (Tadawul)	9,892.0	+4.5	+24.7	+25.0
South Africa (JSE AS)	30,118.2	+2.4	+20.9	+25.6
Europe (FTSEurofirst 300)	1,526.5	+1.7	+2.9	+14.4
World, dev'd (MSCI)	1,609.8	+1.1	+8.5	+8.5
Emerging markets (MSCI)	1,269.4	+5.5	+39.1	+39.1
World, all (MSCI)	408.9	+1.6	+11.2	+11.2
World bonds (Citigroup)	736.0	–0.2	+11.8	+11.8
EMBI+ (JPMorgan)	432.4	+0.9	+6.2	+6.2
Hedge funds (HFRX)	1,329.4	+0.2	+4.2	+4.2
Volatility, US (VIX)	22.5	24.1	11.6	(levels)
CDSs, Eur (iTRAXX)†	55.1	–7.0	+136.2	+162.5
CDSs, N Am (CDX)†	87.9	–2.0	+163.0	+163.0
Carbon trading (EU ETS) €‡	23.1	–2.2	+26.5	+40.7

*Total return index. †Credit-default swap spreads, basis points.

Sources: National statistics offices, central banks and stock exchanges; Thomson Datastream; Reuters; WM/Reuters; JPMorgan Chase; Bank Leumi le-Israel; CBOE; CME; Danske Bank; EEX; HKMA; Markit; Standard Bank

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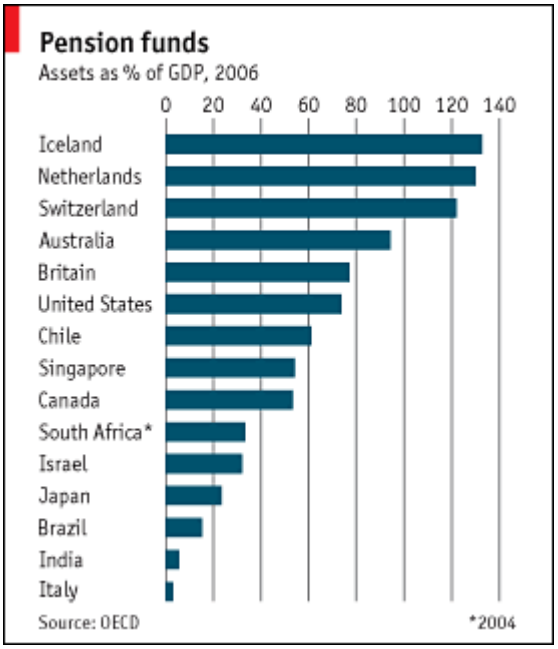
Pension funds

Dec 6th 2007
From The Economist print edition



Private pension funds are generally most prominent in mature economies and exceed 100% of GDP in Iceland, the Netherlands and Switzerland. However, they play a smaller role in several developed countries like Italy, where public pay-as-you-go financing predominates, than in some emerging economies such as Chile. There, compulsory private funding is the rule thanks to reforms introduced at the start of the 1980s. Whether in rich or poorer countries, pension funds tend to be invested mainly in bonds and shares. The figures do not include fast-growing public-pension reserve funds, designed to shore up traditional tax-financed schemes. These are becoming increasingly significant in several countries.

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